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DEVOTED TO SCIENCE AND ART, 1846-1931

*illustrated*  
BY W. H. HOLMES

VOLUME V



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RANDOM RECORDS OF A LIFETIME  
DEVOTED TO SCIENCE AND ART, 1846-1931

BY W. H. HOLMES

VOLUME V, 1879-94

- Section I      1879    Closing of the Interior and War Department Surveys and establishment of the U. S. Geological Survey.  
Visit to England, France, Germany, Switzerland, Holland, Austria and Italy.  
Art Studies in Munich.  
Return to Washington.
- Section II      1880    With Captain Dutton on the Survey of the Colorado Canyon.  
Appointment on the new Survey.  
Preparation of maps and panoramas for the Atlas of the Grand Canyon, Colorado.  
In Charge of the closing of the Hayden Survey.
- Section III    1884    Trip to Mexico with Mr. and Mrs. Chain and W. H. Jackson, photographers.  
Illustrations.
- Section IV    1886-7    In Rocky Mountains with Langley and Powell.  
Adventures and Disaster.  
Ancient Ruins  
The Mother Squirrel and the Snake.  
The Bear Story.  
Remarkable Scenery.
- Section V  
                 1894    Work on Chicago Exposition.  
Acceptance of Chicago position and farewell to Washington. Banquet and Loving Cup.

*Accepted as evidence of original ownership 1892*  
*Atlas of Colorado - 1892*







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# UNITED STATES OF AMERICA



in the year 1879 and of the  
Independence of the United States  
the one hundred and fourth

Signature of the Governor.

Wm. H. Holmes

Wm. M. Evans

No 13736

EXCHANGED & PRINTED AT THE SEABARD ENGRAVING & PRINTING.

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# United States of America.



## DEPARTMENT OF STATE,

To all to whom these presents shall come Greeting:

I, the undersigned, Secretary of State of the United States of America,

herby request all whom it may concern to  
permit William H. Holmes,

a **CITIZEN** of the **UNITED STATES**

\_\_\_\_\_ safely  
and freely to pass, and in case of need to give  
him all lawful Aid and Protection.

### DESCRIPTION.

Age 32 Years

Stature 5 Feet 10 Inches Eng.

Forehead high

Eyes hazel

Nose prominent

Mouth small

Chin medium

Hair dark brown

Complexion medium

Face oval

Given under my hand and the  
Seal of the Department of State,  
at the City of Washington,  
the 28th day of July  
in the year 1879 and of the  
Independence of the United States  
the one hundred and fourth.

Signature of the Bearer.

Wm H. Holmes

Wm M. Evans

13736

ENGRAVED & PRINTED BY THE BUREAU OF THE PRINTING OFFICE.





## CLOSE OF THE HAYDEN SURVEY

### TRIP TO EUROPE

1879-1880

On June 30, 1879, the Hayden Survey of the Territories, which had been for several years actively engaged in Rocky Mountain surveys, was discontinued by Congress. The Army Engineer Survey under the direction of George M. Wheeler was closed at the same time and the U. S. Geological Survey was established by Congress, with Clarence King as Director. Although my work on the old Survey was not completed, I resolved to take a year off for a trip to Europe, the principal objects of the trip being to visit the museums and galleries of the principal cities, and to study art. The second six months of 1879 and the first six months of 1880 were devoted to this outing.

Provided with necessary passport and letters of introduction, the latter by Professor Baird, Dr. Hayden, Mr. Donaldson and others, I sailed August 2, 1879, and landed at Liverpool August 21.

My diary note books of the period give elaborate details of my doings, but, as with those of other periods, they were too voluminous to be preserved or copied, and for the most part have been destroyed, and my many sketches in pencil and water color have been widely scattered.

I had a pleasant voyage, no sickness at all. In London I visited the galleries, museums and public places generally, leaving on August 24 for Dover and thence for Calais, Brussels, Aix La Chapelle, Cologne, Dusseldorf, Zermatt (September 14).





Bonn, Drachenfels, Konigsburg, Rolandseck, Clblenz, Bingen, Dresden, (August 25), Heidelberg (August 28), Frankfort, Strasbourg (Aug.29) Lucern, Basel (August 31), Berne, Interlacken, Genoa. Made sketches everywhere in Switzerland, especially in the Alps, studies of Glaciers, much about Chamounix, Zermatt, the Materhorn, and Zurich (September 20).

Reached Munich, September 22, 1879 where I spent much time in Galleries and Museums. Joined the American Colony of Art students of which Frank Duveneck was the leading spirit. Associated with Turner, Mills, Ritter, Muller, Currier, Frank Duveneck and others. Worked from various models. Made and brought home a lot of sketches showing the influence of the Duveneck School. Ross Turner was a Washington boy and was a good friend.

Returned from Germany to London, March 2, 1880

Paris, March 3 - 15

Genoa, March 15

Pisa, March 16

Rome, March 19 - 31

Naples, April 2, 1880

Vesuvius, April 1, first visit

Herculeum

Pompeii, April 7, 8, 14

Eboli, April 15

Palermo, April 10

Paestum, April 10

Amalfi, April 17 - 24





Capri, ten days, April 24 to May 3

Naples, on the way sketched Capri, Castle  
Mare and Vesuvius.

Rome, May 4

Florence, May 5

Venice, Cheoggia with Weyl, Paris and Freeman.

In Venice I found many artists: Weyl, Ritter, Duveneck DeCamp,  
Alexande, Adams, Spangler, Phenhart, Ferber, Becker, Wendell,  
Corwin, Mills, Currier, Turner

Left Venice May 30, 1880 and set out for Vienna thence  
through Germany to London again and home.





Russell Street,  
sbury, London,  
nuary 18, 1880.

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intellectually and esthetically, and physically superior to all.

This military training makes the men erect and digni-  
fied and the outdoor life and active employments of the women  
make them seem Amazonian.





December 14/1879.

LODGING HOUSE  
NOTIFICATION

Dear Sir,

I allow myself to inform you that according the customes of this town you can't ~~live~~ leave room before giving notice a month ago in the same manner as you hired it; so you can announce me that to-morrow as the 15<sup>th</sup> & that will be that you leave the 15<sup>th</sup> of January. Should you like to go earlier by reasons whatever may be, you have to pay the agreed sum for one month's lodging that means from the 15<sup>th</sup> of December.

I am, dear Sir

Yours

very obedient  
Fryd. Beck





37 Great Russell Street,  
Bloomsbury, London,  
January 18, 1880.

My dear Doctor Hayden:

It took a long time for your letter to find me in Munich but it was heartily welcome when it did come. I am glad to know that you are physically and spiritually in such good trim - may your shadow increase. You will doubtless enjoy living in a house of your own, as I hope will also Mrs. Hayden. I should think it the most satisfactory way to live.

After flitting about the Alps for two or three weeks, seeing a lot of interesting stuff and getting thoroughly tired of civilized mountain climbing, I descended to the lowlands and soon came to a halt in Munich. Here I remained until the end of the year. (1879) My stay in Munich was most delightful and I shall long look back to it with pleasure. It is a city thoroughly to my liking, as quiet as Washington and as full of art as it can "stick." Music as well as art seems as important part of the life of the people. They go to the theater or to the art gallery with as much seriousness and earnestness as we go to church or to the necessary duties of life. The Bavarians are a great people, inferior to none, intellectually and esthetically, and physically superior to all.

This military training makes the men erect and dignified and the outdoor life and active employments of the women make them seem Amazonian.





The Germans have some pretty sharp and hard corners to their characters, but with all are much more polite than the English or Americans. They bow when they meet their acquaintances and take off their hats to men as well as women. They sit down at a table in a public house with you a stranger, they say Good Day, and when they get up to leave they bow and bid you Adieu.

As a rule they are dull and are apparently often not capable of entertaining more than one idea at a time. They feed themselves with their knives and in many other ways are behind the times. They make the best beer in the world and drink oceans of it. Strangely enough there are few fat people. One will see more obese people in America in a month than in Europe in six.

I found many Americans in Munich, mostly artistic and musical students. Two of them Ross Turner and Mr. Mills I had known in Washington, and two others were Duvenick and Mr. Currier from Cincinnati.

The great International Art Exhibition lasted for a month after my arrival and I had a fine chance to study. Our Centennial Art Exhibition could not be compared with it for a moment. For two months I had a studio and did a good deal of water color drawing from life. The models and excellent and there are said to be as many as four thousand artists in





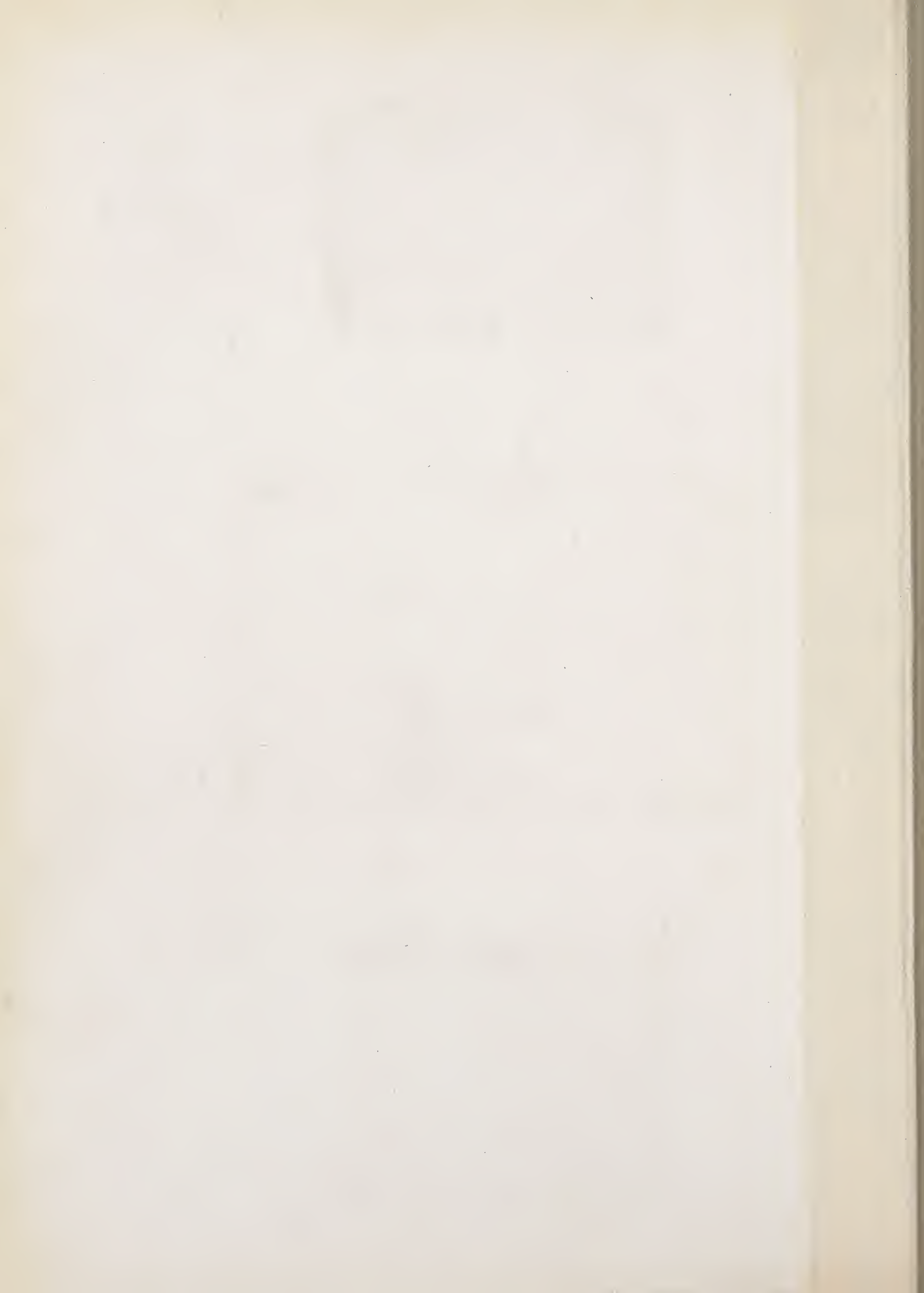
QUEEN ELIZABETH



LONDON, BITS. 1880







the City. The public galleries are hardly surpassed in the world. The city library is next to the largest in the world and the Museums are exceedingly rich in historical, geological and ethnological collections.

THE UNIVERSITY OF CHICAGO  
LIBRARY  
540 EAST 57TH STREET  
CHICAGO, ILL. 60637  
TEL. 773-936-5000



## HOTEL BELLEVUE DRESDEN

August 26, 1880.

My dear Kate:

And now a word from Dresden. Leaving Stuttgart on Wednesday morning at 7, after leaving P.P.C. cards for everybody from King to Anthropologist, I reached Dresden after 12 hours ride through a most beautiful and interesting country. Here I found Marshall and Thompson at the Hotel Bellevue, on the bank of the Elbe. We have spent three days seeing the Museums and Art Galleries and tomorrow morning are off for Berlin, which is only 2 hours and 40 minutes away. Today I have seen two Museums and an art exhibition, which means that I have been on my feet about seven hours.

Dresden is a most interesting old city and withal a real city of importance. We can hardly say that we have "done" the city, but Prof. Meyer, of the Anthropologic Museum, has given us a great lesson in Museum making, which is what we are here for. He is the great authority on museums and installation.

We shall be in Berlin 4 or 5 days and go thence to Hamburg, Brussels, etc., and reach Paris about September 20th or earlier. You can write to me care Hotel I'dena after receiving this letter.

THE JOURNAL OF THE

1880

1880

The first part of the year was spent in the study of the history of the country, and the second part in the study of the history of the world. The first part of the year was spent in the study of the history of the country, and the second part in the study of the history of the world. The first part of the year was spent in the study of the history of the country, and the second part in the study of the history of the world.

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## JOURNAL.

Beginning June 20, 1880.

Find myself in London. Visit Crystal Palace and spend some time in studying the paintings and other very interesting and important exhibits. The Palace is a magnificent structure and its dimensions are truly enormous. The park also is very large and beautiful. Handel's "Israel <sup>in</sup> ~~and~~ Egypt" was being sung by an immense chorus - 3,000 singers and 1,000 instruments. Many very beautiful women. In the Palace I observed especially the groups of plaster casts representing various savage tribes, life size; they are very fine; also a group of Tartars in rich costume.

Called at the Geological Museum and carried a letter to Professor Bristow, geologist. He was very kind and introduced me to Professor Hughes of Cambridge.

Saturday, June 27th: Made sundry purchases and in the evening went to hear the "Pirates of Penzance," only so, so. In walking home through London ~~was~~ acting in real life that made the stage affair seem pale.

Packing my belongings preparatory to leaving England. June 30th sailed from Liverpool by steamer Pennsylvania. About 40 cabin passengers and some hundreds of steerage. Nice weather throughout the voyage save one or two days. Was laid up about half a day. July 9th reached the capes; quarantined; customhouse officials come aboard. Landed at nine Monday the 10th.

In Philadelphia. Called on Dry Hayden and Mr. Don<sup>a d</sup>~~elson~~; and on the 13th reached Washington. Stopped at the Waverly House and engaged storage in the Vernon Row building. Called at the office; saw Henshaw, <sup>Malberry</sup> ~~Pillory~~, Mrs. Marvin and others.



THE HISTORY OF THE

REIGN OF KING CHARLES THE FIRST

IN THE YEAR 1649

BY JOHN BURNET

OF THE UNIVERSITY OF OXFORD

IN TWO VOLUMES

LONDON, 1704

Printed by J. Streater, at the Sign of the Gun, in St. Dunstons Church-yard

And by W. Bland, at the Sign of the Crown, in St. Dunstons Church-yard

And by J. Smith, at the Sign of the Gun, in St. Dunstons Church-yard

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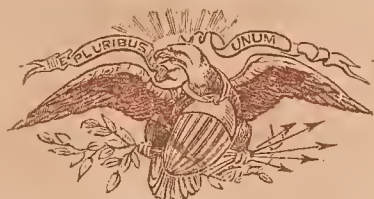
And by J. Smith, at the Sign of the Gun, in St. Dunstons Church-yard







Many American Treatments



# THE CRITERION AMERICAN BAR & WIENER BIER SAAL.

## LIST OF WINTER DRINKS.

HOT TOM AND JERRY. BOURBON WHISKY. RYE WHISKY.  
SODA NOGG.

### LONG DRINKS.

SHERRY COBBLER.  
CLARET COBBLER.  
CRITERION COBBLER.  
HOT AND COLD CRITERION  
LEMONADE.  
HOT AND COLD AMERICAN  
LEMONADE.

HOCK COBBLER.  
BRANDY COBBLER.  
HOT AND COLD EGG NOGG.  
BRANDY PUNCH.  
CLARET PUNCH.  
CIDER NOGG.  
PORT WINE SANGAREE.

SODA COCKTAIL.  
JOHN COLLINS.  
STONE FENCE.  
MILK PUNCH.  
ICED CHOCOLATE.  
ICED COFFEE, &c.  
KNICKEBEIN.

### SHORT DRINKS.

- SQUARE MEAL.  
POUSSE CAFÉ.  
+ PRAIRIE OYSTER.  
RUM AND MOLASSES.  
RUM AND HONEY.

CORPSE REVIVER.  
OUR SWIZZLE.  
CRITERION REVIVER.  
PEACH BRANDY & HONEY.  
+ BOSOM CARESSER.

FLASH OF LIGHTNING.  
BRANDY AND GUM.  
+ AL-A-BA-ZAM.  
CRITERION FLIP.  
&c., &c.

### CRITERION SPECIALITIES.

#### MAGNOLIA.

FLIP FLAP.  
BRANDY COCKTAIL.  
GIN AND TANSY.  
GIN COCKTAIL.  
HEAP OF COMFORT.  
EGG COCKTAIL.  
WHISKY COCKTAIL.  
+ RATTLESNAKE.

VERMOUTH COCKTAIL.  
SHERRY BLUSH.  
+ FAIRIES' KISS.  
CHAMPAGNE COCKTAIL.  
LADIES' BLUSH.  
BRANDY SOUR.  
WHISKY SOUR.

ST. CROIX SOUR.  
GIN SOUR.  
COLLEEN BAWN.  
CRITERION COFFEE PUNCH  
+ PICK-ME-UP.  
SADDLE ROCK.  
GIN SMASH.  
SHERRY FLIP.

COBBLERS, PUNCHES, NOGGS.

BOTTLED COCKTAILS—A SPECIALITY.  
LAGER BEER, 6d. PER BOCK.

ALL DRINKS AT THE AMERICAN BAR ONE SHILLING.  
SPIERS & POND, PROPRIETORS.

FOR SPIRITS AND LIQUEURS SEE OVER





W.H.14

Stonehenge

Hundreds of sketches in  
pencil & water colors  
have gone into other places







Memory bits in Italy 1880.







On Amalfi Woman at the well





A monk - at Reville Italy, 1890.

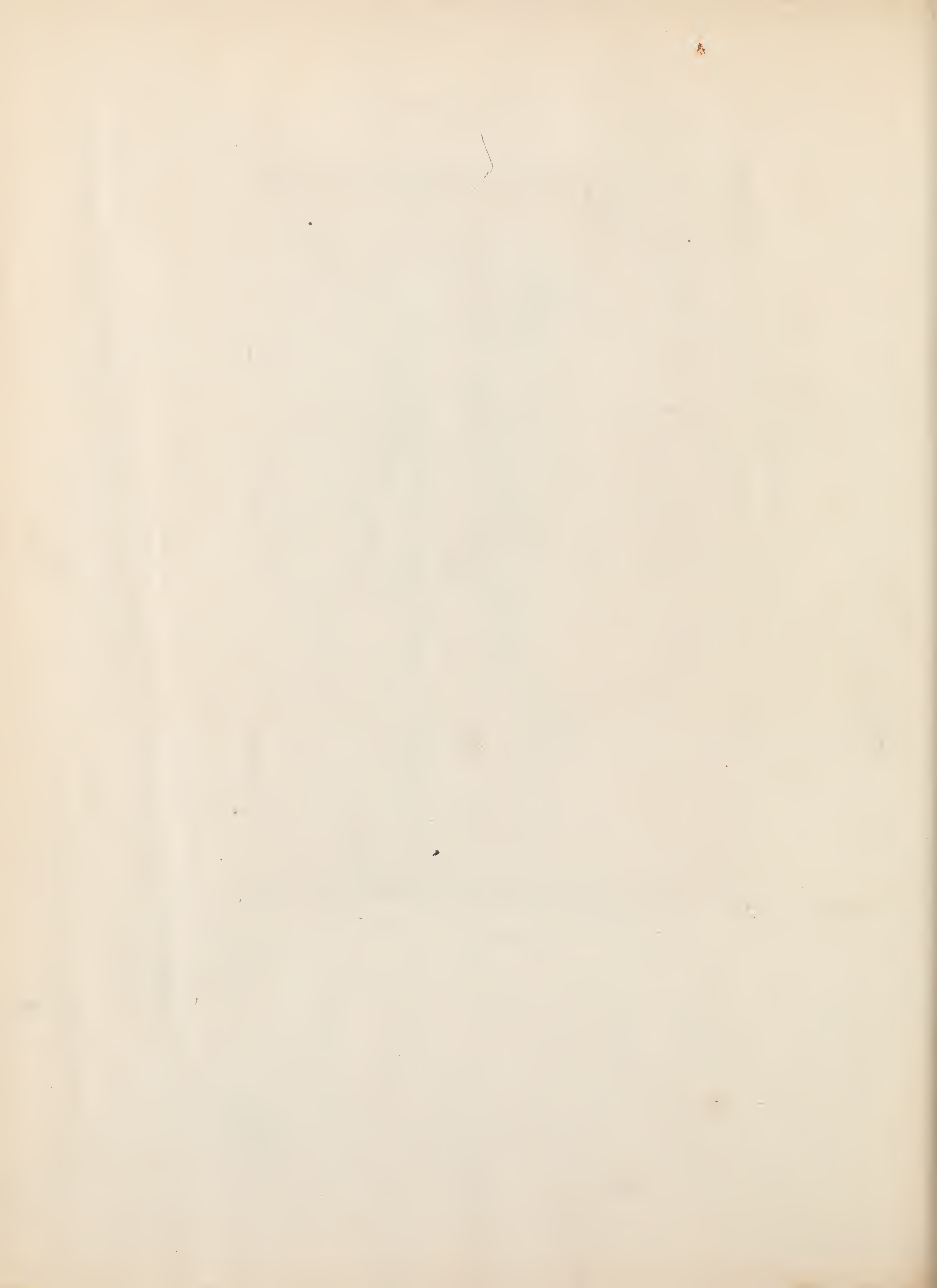






Young Faggot-gatherer of Kailash

Revelle 1884  
W.H.

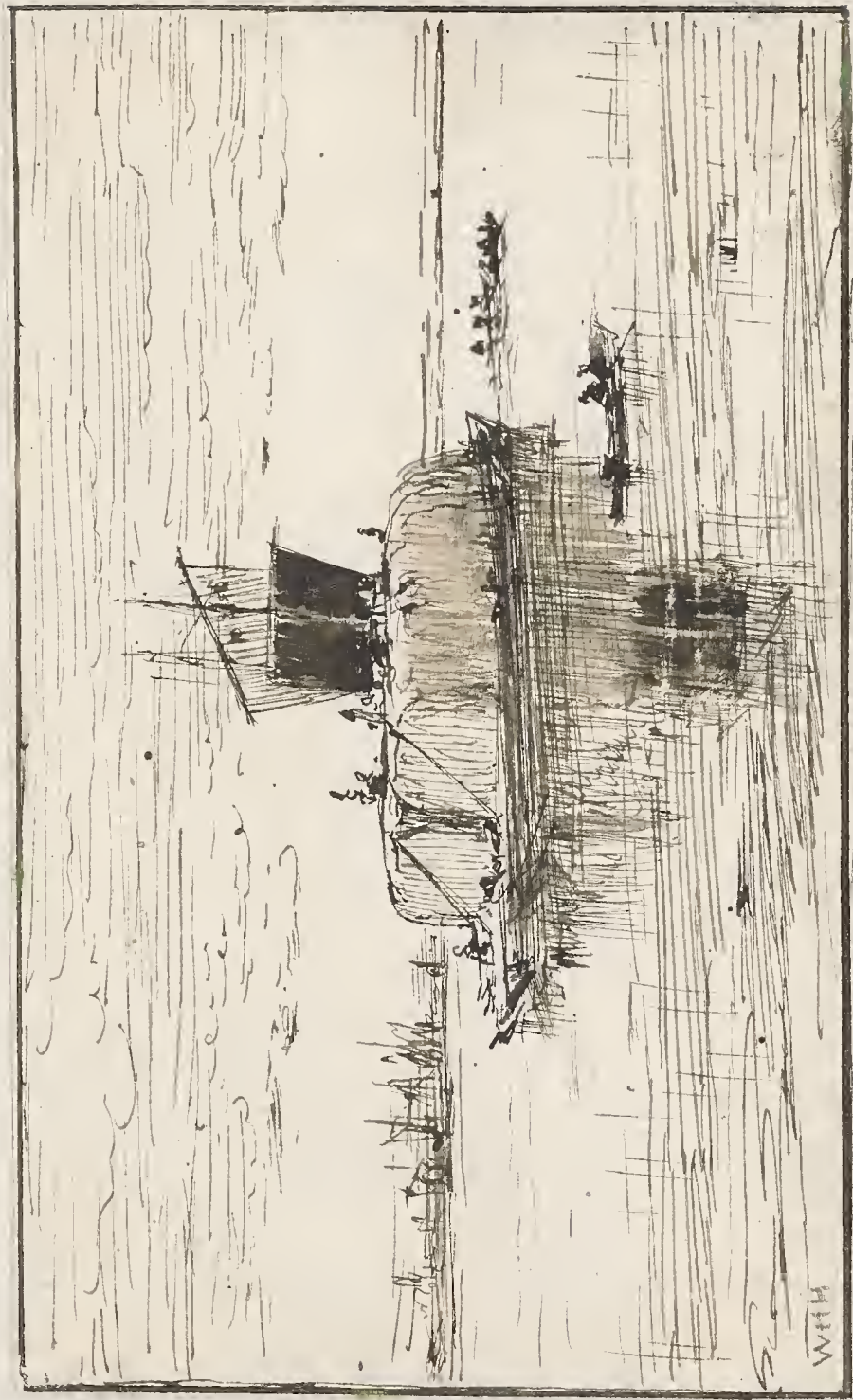






At Amalfi, Italy, 1880. W.H.H.





Pen drawing of a Pair of dog boats in the Venetian lagoon 1898









9 March

1880

Water Color. w. p. 11



From a water color study of a professional model  
made in Munich. 1880, W.H.N. original now in historical  
exhibit case in Calif. Mus. Oct 10. 1928 W.H.N.





Water color by W. H. H.

Nantux

Vesuvius



0821 SIMTOMI M.







*Peperius*

III







Italy









VOLUME V

SECTION II, 1880

With Captain Dutton on the Survey  
of the Colorado Canyon.

Appointment on the new Survey.

Preparation of maps and panoramas  
for the Atlas of the Grand Canyon,  
Colorado.

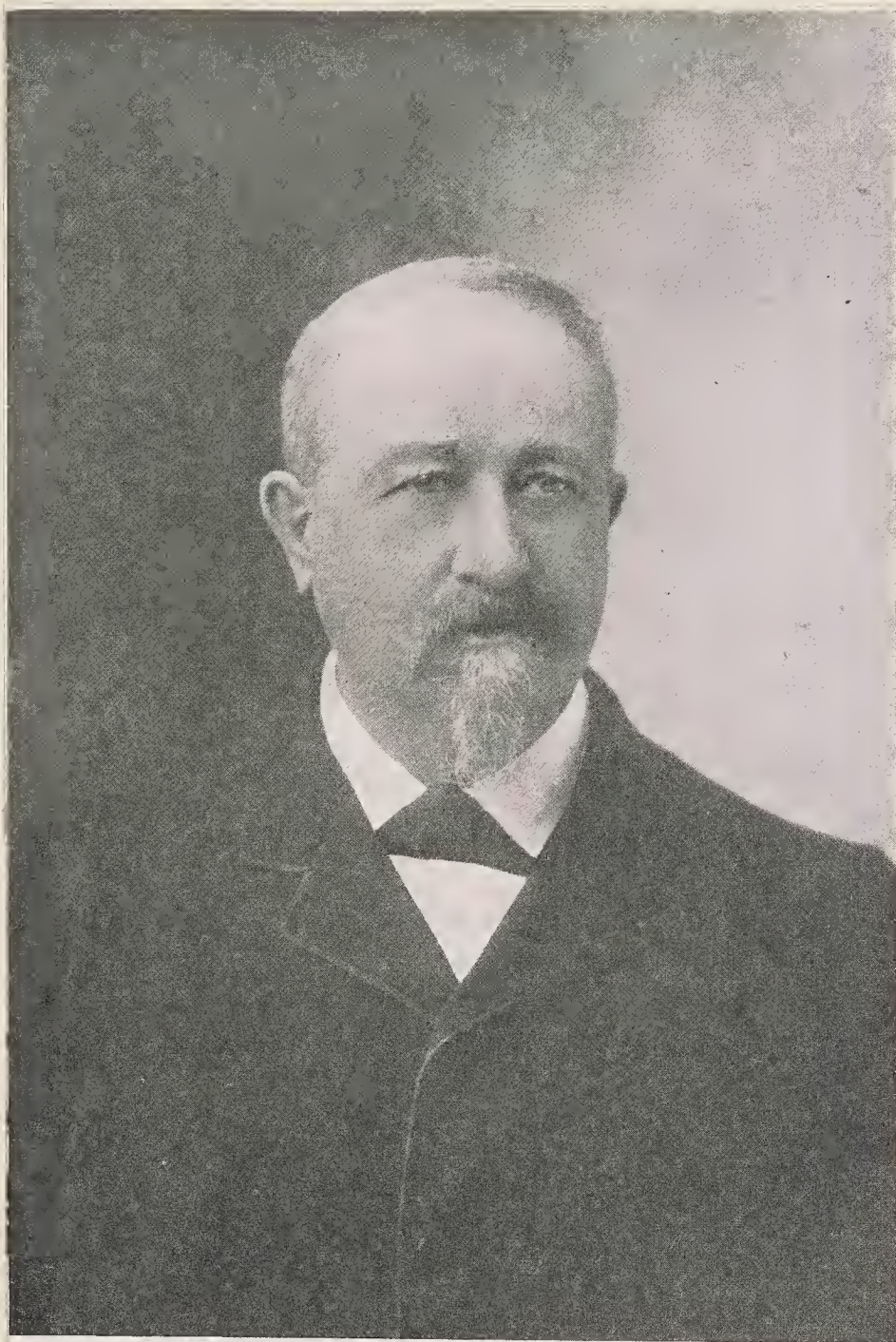
In charge of the closing of the  
Hayden Survey.



*Aspen grove  
along the river  
of the Hayden*







C. E. Dutton  
Captord

See Dutton biographical sketch  
in Bulletin Geologic Society of America  
March 24 1913





## GRAND CANYON TRIP

1880

On my return from Europe on July 9, I had a very pleasant time greeting friends and showing the drawings and water colors made while abroad. Met numerous people of importance. Showed my sketches at the Cosmos Club, and Messer showed them to his school at the Corcoran Gallery.

Soon, however, as expected, I found my services required as a geological assistant on the newly organized geological survey with Clarence King as Director, and was delighted to find that I was booked for a trip to the Grand Canyon of the Colorado to join Captain C. E. Dutton who was engaged in the survey of that land of marvels. As the season for work there was passing, I had to be off at once, and Mr. McChesney, paymaster of the Survey, arranged my transportation. I left Washington on July 3, 1880, at eight in the morning. Met S.H. proprietor of the "Star" on the train and had ~~x~~ long talks with him. Traveled by way of Chicago, St. Louis, Omaha, and Ogden. Reached Salt Lake on July 10; thence reached Milford and took stage to St. George, <sup>Utah</sup> which place was reached August 13. Got lodgings in the house of Apostle Snow. Plenty of fine grapes and other fruit.

August 14, at St. George: Walked out and climbed the basaltic mesa a mile west of town. Found fossils beneath the lower bed of basalt and made numerous other observations. From





the summit of the bluff had a good view of the valley of the Santa Clara and of the interesting recent flows of lava. Mormon residents, Messrs. Woolly, Lund and Judd were very kind. They know many of our Survey people who have visited St. George during previous years. Did some water color sketching while delayed at this place. Could get no word from Dutton who was at Kanab and concluded to hire a conveyance and go on. Hardy would take me for \$25; started at half past seven in the evening. Reached and ascended Hurricane Bluffs before morning.

On August 17 we met a man sent with wagon from Captain Dutton at Kanab to take me to Mount Trumbull. Got into camp within ten miles of Pipe Springs at what is known as Cedar Bluff. The trees were on the east face of the bluff and grew mostly in sand hills. There are many trunks of petrified trees that seem to be of large straight pine rather than of dwarfish cedars and pinons that grow here now. The largest of these trunks is upwards of 30 feet in diameter for a length of 12 feet or more. Near Pipe Spring I found a few mounds with fragments of pottery and flint chips. Some heaps of stone projecting from the low ridge appear to have been placed by Indians. All around the spring are fragments of pottery, flint and some arrow points. The pottery is of both the painted and indented ware. Made plans of some ruins that occur about 400 yards south of the spring (see sketch book.)

August 18th: Spent the day looking around the post. Late in the evening Mr. Jones and Mr. Sweet came in and at ten the remainder of the party. Had supper and a talk with Captain





Dutton and Mr. Bodfish.

August 19th: Marched 22 miles toward Mount Trumbull. The rocks at the spring are triassic, but the plain across which we marched is underlaid<sup>n</sup> by the permian. Details of geological observations omitted.

August 20th: Marched all day. Reached the saw mill tanks at the base of Mount Trumbull at night. Captain Dutton says that I am to work on the stratigraphy of the sedimentary and he on the volcanic formations.

August 21st: Climbed Mount Trumbull and made sketch of canyon district to the east.

August 22nd: Climbed Mount Trumbull again.



## Reach Grand Canyon

Aug. 23rd: On east end of Trumbull sketching the toro-  
weap.

Aug. 24th: Rode over to the summit of Mount Logan with  
Captain Dutton; afterwards to Oak Springs.

Aug. 25th: Visited Hurricane Ledge and a number of vol-  
canic cones. Everywhere encountered graves and pottery fragments.

Aug. 26th and 27th: On geological studies.

Aug. 28th: Went down to the Grand Canyon. Got a glimpse  
of the magnificent spectacle and hurried back, there being no water  
within reach.

Aug. 29th: Climbed Mount Emma and made panoramas.

Aug. 30th: Again on Mount Logan.

Aug. 31st: On Hurricane Ledge. Started on a three days  
trip to the Grand Canyon.

Sept. 1st, 2nd, 3rd and 4th: Made sketches in camp. Spent  
several days about the rim of the canyon.

(Two pages of the note book lost).

The sun had set behind the walls of the Grand Canyon, leav-  
ing the sky a wall of murky crimson. The winds arose and swept  
along the ledge behind the great pines. Before a group of cyclo-  
pean buttes seamed and pinnacled lifted their heads from the  
silent, somber depths into the light. Beyond a space lay  
in gloom, whose depth and width no man would dare to guess, rises  
a giant wall of dense red. Beyond this the shadows crept across  
the broad cliff broken plains; and the shadows of the world, dark  
and blue, crept up the orange sky.

Sept. 17th: Left camp and set out for the Kaibab plateau.





Rode 30 miles across a flat country; camped on a cedar ridge, where we had a view of the strange and fantastic cliffs to the north (see sketch book)

Sept. 18th: Made a long march to DeMotte Park, center of Kaibab plateau. Pass the Piute camp, entered the plateau canyons and soon reached the shallow, grassy swales of the upland. From a barren sage plain we passed into a region of pines and lovely aspens, of grass and flowers. Chilly evening. Bodfish and party in camp. *Made sketches in water color, but too large to be included here*

Sept. 19th: Left camp for a point on eastern brink of plateau. Three hours through aspen groves and grassy swales; saw deer and grouse. Camped on a promontory that overlooks the vast, red desert of the Marble canyon - altogether a scene long to be remembered. The Paria plateau, Navaho, Henry and LaSalle mountains, the latter 200 miles away, the Echo cliffs and the marvelous canyon are all in view. *In 1876 one of the Henry mountains was named after me by Prof. Gilbert*

Sept. 20th: Made panoramic sketches and returned to camp in the park.

Sept. 21st: Made sketches of aspens. In the afternoon whole party went down to Thompson's Springs.

Sept. 22nd: Rode down swale five miles and came out of woods upon the brink of the most marvelous canyon, the bottom of which could hardly be seen and the side walls of which were wonderfully carved and colored (see sketch).

Sept. 23rd: From Thompson's Springs by way of Sedge Pool to Point Zed. Splendid views of the canyon on the one hand and of the beautiful woods on the other. Stone enclosures and pottery observed.







Sept. 24th: Sketched with greatest pressure from sunrise until half past three marvelous buttes and most interesting geology. Returned to Sedge Pool 12 miles.

Sept. 25th: Passed through forest and parks to Thompson's Springs, to Milk Springs and afterwards with two men and a cook hurried on to Point Sublime. Arrive before sunset and had a glance at the grandest, the most extraordinary panoramas in the wide world.

Sept. 26th, 27th & 28th: Sketched from sunrise to sunset except while at meals and until nine o'clock the morning after.

Sept. 29th: Returned to the park.

Sept. 30th: Whole party set out for camp. Camped at Big Spring. The aspens are finer than ever. The leaves are like gold and play about the white branches and trunks like the golden head dress of a Trojan queen about her shoulders.

Oct. 1st: Marched across country to within 15 miles of Kanab.

Oct. 2nd: Did some geological work. Discovered a large ruined pueblo on a low butte by the Mormon meadow. Much pottery of great variety, arrow points, standing stones and piles of debris.

Oct. 3rd: Revisited the ruined pueblo.

Oct. 4th-8th: In camp in the Kanab region.

Oct. 9th: Crossed Short Creek to camp in a grove under southeast base of a long, toothed butte. Climbed to the saddle and had a glorious view of a glorious sunset on the Temple of the Virgin and the scarred cliffs and lofty domes about Little Zion Valley.

Oct. 10th: Had a chilly day's sketching the panorama across





the Virgin River in strong colors and rich effects.

Oct. 11th: Descended to the Rio Virgin by a winding road and enjoyed the changing panorama of the Virgin cliffs.

Oct. 13th: Passed down the Rio Virgin to Virgin City. Wonderful Bad Land cliffs of the permian. Rode out upon Hurricane Ledge to the south and had a fine view back into Rock Rover's land, painted recently by Moran. Descended to the Virgin and camped a little to the north of Leverker Creek.

Oct. 14th: Made sketch of sand hills and ledge. Passed through Toquerville and camped on the divide at the head of Ash Creek. Sketch of rocks and ledge at Bell View. Sketch of palm yucca.

Oct. 15th: Rode on to Summit in the face of an Arctic wind.

Oct. 16th: From Summit through Parowan to within 12 miles of Beaver.

Oct. 17th: To Fort Cameron. Took dinner and breakfast with Major Couse and Captain \_\_\_\_\_.

Oct. 18th: Travelled by jerky to Milford.

Oct. 19th: To Salt Lake by rail. Spent several days in Salt Lake City, going out three days with Professor Gilbert to make sketches of geological subjects.

Oct. 24th: Take train for home.

Returning to Washington from the Grand Canyon trip with Captain Dutton, October 29, 1880, I took up actively writing and office work of the Hayden Survey. Carried forward my studies of the evolution of ornament, utilizing especially pottery decoration.





## Closing the work of the Hayden Survey

Took part in antiquity of man investigations. Superintended illustrations and engraving, the preparation of the Dutton <sup>Grand Canyon 2</sup> atlas, management of publications and accounts for the Survey. Publications in hand were those of Hayden, Coues, Cope, Allen, St. John, Grote, Hoffman, Yarrow, Packard, Schufeldt, Gray and Hooker, Dutton, Scudder, <sup>and</sup> Lesquereux; in nearly all cases closing our final publications of the Hayden Survey of the Territories. The publication work was very complex and besides I had charge of the business of the Survey generally.

December 18, 1880, received from Dr. Hayden in Philadelphia notice of my <sup>61</sup> appointment to succeed Coues in charge of the Survey. Coues, who had been out West for some time, is said to have felt pretty sore. Continued in charge of this work during January, February, March, April, May and June, the note book utilized for this writing closing June 24, 1881.

*Introduce letter here.*

*See Chronology of appointments*

*Vol I*

*Wm. King - director*







Major C. E. Dutton -  
with whom I was associated  
in the survey of the general  
canyon of the Colorado  
1880



## CLARENCE EDWARD DUTTON

Soldier and Geologist. Born in Wallingford, Conn., May 15, 1841; graduated in arts at Yale 1860; first Lieutenant and afterward Captain Twenty-first Connecticut Volunteers 1862; Second Lieutenant of Ordnance, U. S. Army, 1863; First Lieutenant 1867; Captain 1873; Major 1890. As an officer of volunteers he was engaged at Fredericksburg, Norfolk, Cold Harbor, Bermuda Hundred, and Drury's Bluff. In 1884 he was elected a member of the National Academy of Sciences. As an ordnance officer he has contributed to the literature of gunnery, and also written on the metallurgy of steel and on economics, but his more important publications are in the field of geology. In 1875 he was detailed to assist the U. S. survey of the Rocky Mountain region, under Major J. W. Powell; in 1879-80 he was Secretary of a commission charged with the investigation of problems connected with the U. S. land system; from 1880 to 1891 he was a member of the U. S. Geological Survey. Among his geologic writings are "Geology of the High Plateaus of Utah," (Washington 1880; "Tertiary History of the Grand Canon District" (1882); "Hawaiian Volcanoes (1884); "Mount Taylor and the Zuni Plateau" (1886); and "The Charleston Earthquake of August 31, 1886"(1889).





DUTTON

Kanab August 18

of party

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into the desert  
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and the first  
h snow. Heavy  
reading their

My dear Holmes,  
The last heard  
from you was by telegram from Kaibab, and  
Salt Lake, saying that you  
were going to St. George direct  
I now regret that I did not say  
Silver Reef but it is too  
late to send that. I send  
you a wagon & driver Mr.  
John Smith to bring you &  
all your traps to Mt. Fremont  
for which place I start  
to-morrow - to make a long

fleeces over turret and crest, and sending down curling  
flecks of white mist into the nooks and recesses between  
towers and buttresses. The next day was rarer still, with  
sunshine and storm battling for the mastery. Rolling  
masses of cumuli rose up into the blue to incomprehensible

Camp here. You will have a  
rather hard ride as well  
as hot ride but Mr. Drummond  
is not a bad place. Take  
with you for your ride of  
two days as many "goodies"  
as you like or make whatever  
arrangements you think fit  
for fighting the misery of  
the desert you will have  
to cross. Put in as much  
fruit as you can conveniently  
carry & remember that what  
you cannot eat on the way  
will find plenty of eager  
mouths yawning for it at



the journey and perhaps the  
boat which you can be sure  
would be provided for them.  
God bless them - with smiles  
all over their faces. I will  
gladly pay the bill.

I have no idea when  
you will get to St. George's  
Island - at random. If a telegram  
comes from you after my departure  
I will make arrangements to  
have it answered.

Yours very truly  
C. E. Dutton



*Biography of W. H. Holmes 1880.  
See illustrations & Reports for that year*

THE VERMILION CLIFFS.

*By Capt. Clarence E. Dutton, in charge of party*

// Late in the autumn of 1880 I rode along the base of the Vermilion Cliffs, from Kanab to the Virgen, having the esteemed companionship of Mr. Holmes. We had spent the summer and most of the autumn among the <sup>?</sup>cones of the Uinkaret, in the dreamy parks and forests of the Kaibab, and in the solitudes of the intervening desert; and our sensibilities had been somewhat overtasked by the scenery of the Grand Canon. It seemed to us that all grandeur and beauty thereafter beheld must be mentally projected against the recollection of those scenes, and be dwarfed into commonplace by ~~the~~ comparison; but as we moved onward the walls increased in altitude, in animation, and in power. At length the towers of Short Creek burst into view, and, beyond, the great cliff in long perspective thrusting out into the desert plain its gables and spurs. The day was a rare one for this region. The mild, subtropical autumn was over, and just giving place to the first approaches of winter. A sullen storm had been gathering from the southwest, and the first rain for many months was falling, mingled with snow. Heavy clouds rolled up against the battlements, spreading their fleeces over turret and crest, and sending down curling flecks of white mist into the nooks and recesses between towers and buttresses. The next day was rarer still, with sunshine and storm battling for the mastery. Rolling masses of cumuli rose up into the blue to incomprehensible





heights, their flanks and summits gleaming with sunlight, their nether surfaces above the desert as flat as a ceiling, and showing, not the dull neutral gray of the east, but a rosy tinge caught from the reflected red of rocks and soil. As they drifted rapidly against the great barrier, the currents from below, flung upward to the summits, rolled the vaporous masses into vast whorls, wrapping them around the towers and crest-lines, and scattering torn shreds of mist along the rock-faces. As the day wore on the sunshine gained the advantage. From overhead the cloud-masses stubbornly withdrew, leaving a few broken ranks to maintain a feeble resistance. But far in the northwest, over the Colob, they rallied their black forces for a more desperate struggle, and answered with defiant flashes of lightning the incessant pour of sun-shafts.

Superlative cloud effects, common enough in other countries, are lamentably infrequent here; but, when they do come, their value is beyond measure. During the long, hot summer days, when the sun is high, the phenomenal features of the scenery are robbed of most of their grandeur, and cannot or do not wholly reveal to the observer the realities which render them so instructive and interesting. There are few middle tones of light and shade. The effects of foreshortening are excessive, almost beyond belief, and produce the strangest deceptions. Masses which are widely separated seem to be superposed or continuous. Lines and





surfaces, which extend towards us at an acute angle with the radius of vision, are warped around until they seem to cross it at a right angle. Grand fronts, which ought to show depth and varying distance, become flat and are troubled with false perspective. Proportions which are full of grace and meaning are distorted and belied. During the midday hours the cliffs seem to wilt and droop as if retracting their grandeur to hide it from the merciless radiance of the sun whose very effulgence flouts them. Even the colors are ruined. The glaring face of the wall, where the light falls full upon it, wears a scorched, overbaked, discharged look; and where the dense black shadows are thrown--for there are no middle shades--the magical haze of the desert shines forth with a weird, metallic glow which has no color in it. But as the sun declines there comes a revival. The half-tones at length appear, bringing into relief the component masses; the amphitheaters recede into suggestive distances; the salients silently advance towards us; the distorted lines range themselves into true perspective; the deformed curves come back to their proper sweep; the angles grow clean and sharp; and the whole cliff arouses from lethargy and erects itself in grandeur and power, as if conscious of its own majesty. Back also come the colors, and as the sun is about to sink they glow with an intense orange-vermilion that seems to be an intrinsic luster emanating from the rocks themselves. But the great gala-days of the cliffs are those when sunshine and storm are waging an even battle; when the massive banks





of clouds send their white diffuse light into the dark places and tone down the intense glare of the direct rays; when they roll over the summits in stately procession, wrapping them in vapor and revealing cloud-girt masses here and there through wide rifts. Then the truth appears and all deceptions are exposed. Their real grandeur, their true forms, and a just sense of their relations are at last fairly presented, so that the mind can grasp them. And they are very grand--even sublime. There is no need, as we look upon them, of fancy to heighten the picture, nor of metaphor to present it. The simple truth is quite enough. I never before had a realizing sense of a cliff 1,800 to 2,000 feet high. I think I have a definite and abiding one at present.

As we moved northward from Short Creek, we had frequent opportunities to admire these cliffs and buttes, with the conviction that they were revealed to us in their real magnitudes and in their true relations. They awakened an enthusiasm more vivid than we had anticipated, and one which the recollection of far grander scenes did not dispel. At length the trail descended into a shallow basin where a low ledge of sandstones, immediately upon the right, shut them out from view; but as we mounted the opposite rim a new scene, grander and more beautiful than before, suddenly broke upon us. The cliff again appeared, presenting the heavy sandstone member in a sheer wall nearly a thousand feet high, with a steep talus beneath it of eleven or twelve hundred feet more. Wide alcoves receded far back into the mass, and in their





depths the clouds floated. Long, sharp **spurs** plunged swiftly down, thrusting their monstrous buttresses into the plain below, and sending up pinnacles and towers along the knife edges. But the controlling object was a great butte which sprang into view immediately before us, and which the salient of the wall had hitherto masked. Upon a pedestal two miles long and a thousand feet high, richly decorated with horizontal moldings, rose four towers highly suggestive of cathedral architecture. Their altitude above the plain was estimated at about 1,800 feet. They were separated by vertical clefts made by the enlargement of the joints, and many smaller clefts extending from the summits to the pedestal carved the turrets into tapering buttresses, which gave a graceful aspiring effect with a remarkable definiteness to the forms. We named it Smithsonian Butte, and it was decided that a sketch should be made of it; but in a few moments the plan was abandoned or forgotten. For over a notch or saddle formed by a low isthmus which connected the butte with the principal mesa there sailed slowly and majestically into view, as we rode along, a wonderful object. Deeply moved, we paused a moment to contemplate it, and then abandoning the trail we rode rapidly towards the notch, beyond which it soon sank out of sight. In an hour's time we reached the crest of the isthmus, and in an instant there flashed before us a scene never to be forgotten. In coming time it will, I believe, take rank with <sup>the</sup> a very small number

*It is forgotten 1932, WMS*

+





Citation from Capt. Dullons report in the U.S. Geol. Survey report No. 880-81  
being died & date

On the 19th of August I left Kanab for the Uinkaret Plateau.

Reaching Pipe Spring, 20 miles southwest of Kanab, I was rejoiced to find Mr. William H. Holmes, who had come to join me and co-operate in the work. Leaving Pipe Spring, we pushed across the desert to the southwestward, and in two days more made camp at the base of Mount Trumbull, on its southwest side. Preparations for a protracted camp were made and nearly four weeks were occupied in making excursions almost daily to all surrounding parts within one or two days' march. The Uinkaret Plateau was quite thoroughly examined."

X X X X X  
During our stay at Mount Trumbull Mr. Holmes's magical pencil was ever busy. Large and elaborate sketches of the panoramas presented from Mounts Trumbull, Logan, and Emma; of the splendid vista of the Toroweap Valley, and of the superlative spectacle of the Grand Canon as seen from Vulcan's Throne, were made in rapid succession.

From the Uinkaret we returned to Kanab and proceeded thence to the Kaibab. I went there to visit those portions of it which I had not hitherto seen, and to review portions seen but not appreciated years before. Mr. Holmes devoted himself to making sketches of the chasm. Among them is a panorama of the Canon from Point Sublime. The studies on the Kaibab were of the same general nature as those of the Uinkaret, and had their bearing on the geological history and evolution of the district.

Returning to Kanab, Mr. Bodfish and his assistants were sent northward to Salt Lake City, with instructions to return at once to Washington. I remained with Mr. Holmes in order to make another journey



along the front of the Vermillion Cliffs, northwestward as far as the Valley of the Virgen, and thence southwestward to view the country in the vicinity of the Hurricane fault, and to the west of it. Thence we journeyed northward, along the western or dropped side of the Hurricane fault, and on the 23d of October, we reached Fort Cameron, at the town of Beaver in Utah. Here the laborers of my immediate party were discharged, and I returned without delay to Washington.





along the front of the Vermilion Cliffs, northwestward as far as the Valley of the Virgen, and thence southwestward to view the country in the vicinity of the Hurricane fault, and to the west of it. Thence we journeyed northward, along the western or dropped side of the Hurricane fault, and on the 23d of October, we reached Fort Cameron, at the town of Beaver in Utah. Here the laborers of my immediate party were discharged and I returned without delay to Washington.

During the past winter and up to the close of the fiscal year ending June 30, 1881, I have been occupied in the preparation of a monograph on the Tertiary History of the Grand Canon District. The maps have been completed by Mr. Bodfish and Mr. Renshawe, the former having delineated the Kaibab division of the Grand Canon and the surface topography of the southern part of the Kaibab Plateau, while the latter has drawn the map of the Uinkaret Plateau. Mr. Holmes has redrawn the sketches of the Canon and adjoining regions, and the materials are now in the engraver's hands, as are also the maps. The manuscript of the monograph, is very nearly completed."





W. H. H.

*Citation*

Extracts from the

UNITED STATES GEOLOGICAL SURVEY

J. W. POWELL, DIRECTOR

*Clarence King had done a parallel survey*

TERTIARY HISTORY OF THE GRAND CANON DISTRICT (With Atlas)

By Clarence E. Dutton

Captain of Ordnance U. S. A.

The frontispiece in color and most of the other illustrations are by W. H. Holmes.

*See also the  
great atlas with  
very panoramic*

0-0-0-0-0-0-0

"During the summer of 1880 I was so fortunate as to have the companionship and assistance of Mr. Holmes. His reputation as a field-geologist is already established by his work in connection with Dr. Hayden's Survey. But besides rendering valuable assistance in working out geological details he made many sketches which he has reproduced in the pictures of the text and in the panoramas of the Atlas. To praise such work would be superfluous. But I must call attention to a merit which may not be so obvious to one who has never seen the region, and this is the wonderful fidelity with which he portrays rock-characters." (Page viii, The Preface, by C. E. Dutton.)



**Fred Harvey**

GENERAL OFFICE, AMERICAN BANK BUILDING,  
KANSAS CITY, MO.

CHICAGO OFFICE  
311 ST. & WENTWORTH AVE.

Kansas City, Mo., February 23", 1910

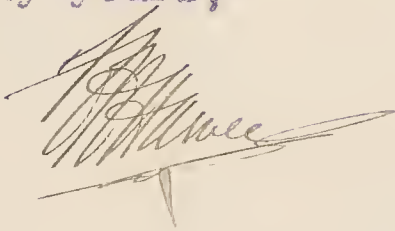
Dear Mr. Holmes:-

I observe from the press reports a Bill for a scenic railroad on the rim at Grand Canyon is being pressed in Congress and that same has been referred to the Secretary of Agriculture for his opinion.

You have been to the Canyon and can appreciate how abhorrent such a proposition would be to every refined sentiment. If you have any influence with the Secretary of Agriculture, or with any authority that controls in this matter, I hope you will feel like exercising it.

With cordial remembrances, believe me,

Faithfully yours,



Prof. William H. Holmes,

Smithsonian Institute,

Washington, D. C.,







EL TOVAR, GRAND CANYON, ARIZONA  
FRED HARVEY

May 8th, 1909.

My dear Kate:

I reached this charming place yesterday noon and have had one day of interesting exploration of the rim of the Grand Canon. It is a grand and astonishing affair and I wish you could be here to see it and to stay a week or two. The hotel is tastefully placed and built, and no better accommodations can be found anywhere.

Today I shall spend with a party of Santa Fe Railroad Officials and Forest Service Agents in looking after a proper location for the Powell monument. Tonight I am off for Los Angeles, about 24 hours journey.

As grand as all this is I would rather be with you on the little farm and I shall hurry back as soon as my duties will permit.

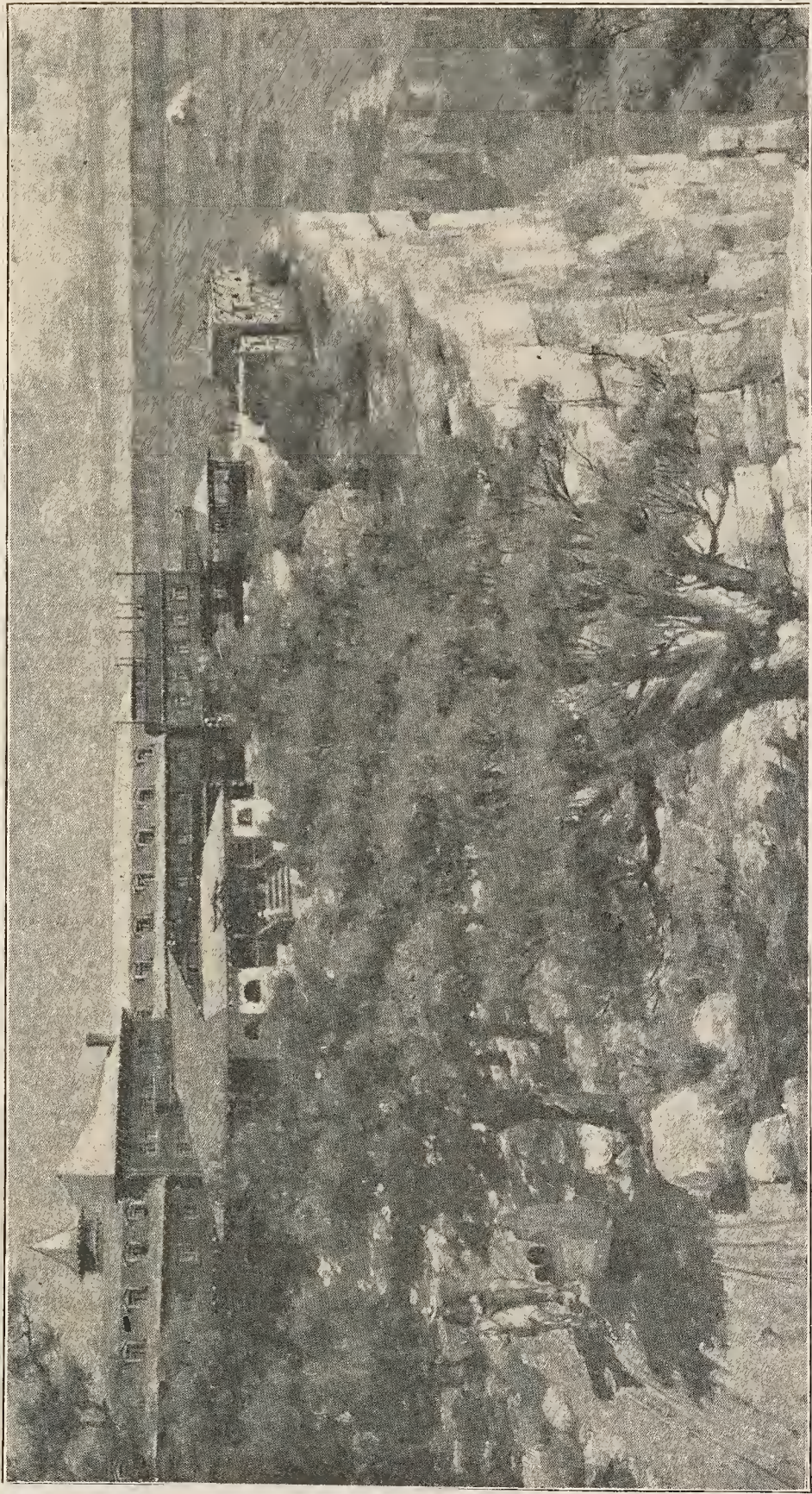
I had some of the Survey folks with me on the way out and find plenty of friends here. Dined last night with Harvey, proprietor of this plant and of the great system of restaurants of the Santa Fe, and with seven others.

Hope you are well and well settled in Holmescroft.

W. H. H.





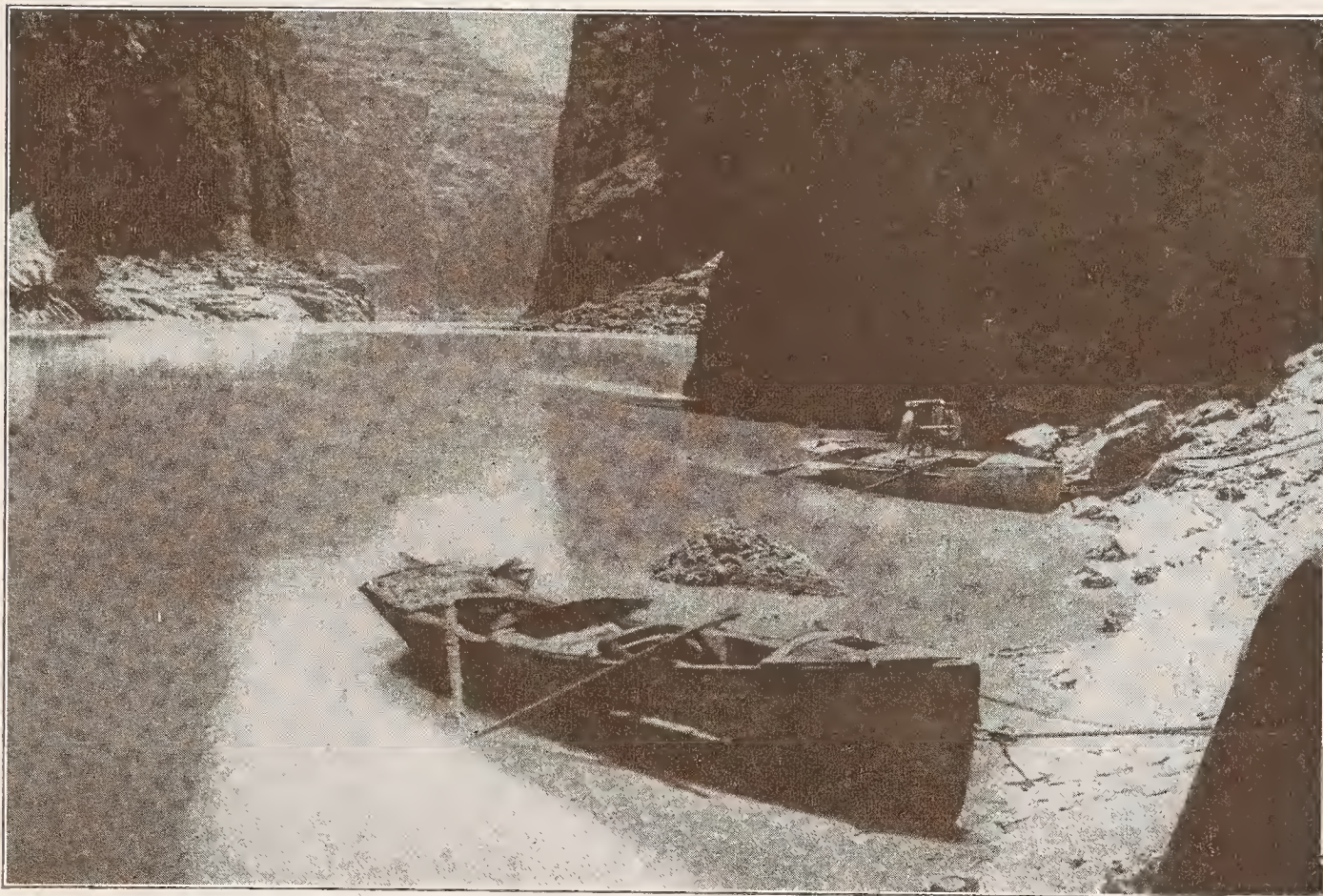


El Jevor





than dozen floated clear of the Grand Canyon and many of them



*Photograph by Geological Survey*

TWO OF THE BOATS USED BY MAJOR POWELL IN EXPLORING THE CANYON























"I have come here to see the Grand Canyon of Arizona, because in that canyon Arizona has a natural wonder, which, so far as I know, is in kind absolutely unparalleled throughout the rest of the world. I shall not attempt to describe it, because I cannot. I could not choose words that would convey or that could convey to any outsider what that canyon is. The only word I can use for it is awful. It filled me with awe such as I have never before known. It is beyond comparison; it is beyond description."

*Theodore Roosevelt*









FROM COPYRIGHTED PHOTOGRAPH BY H. G. PEABODY, BOSTON

LOOKING ACROSS THE CANYON, FROM ROWE POINT

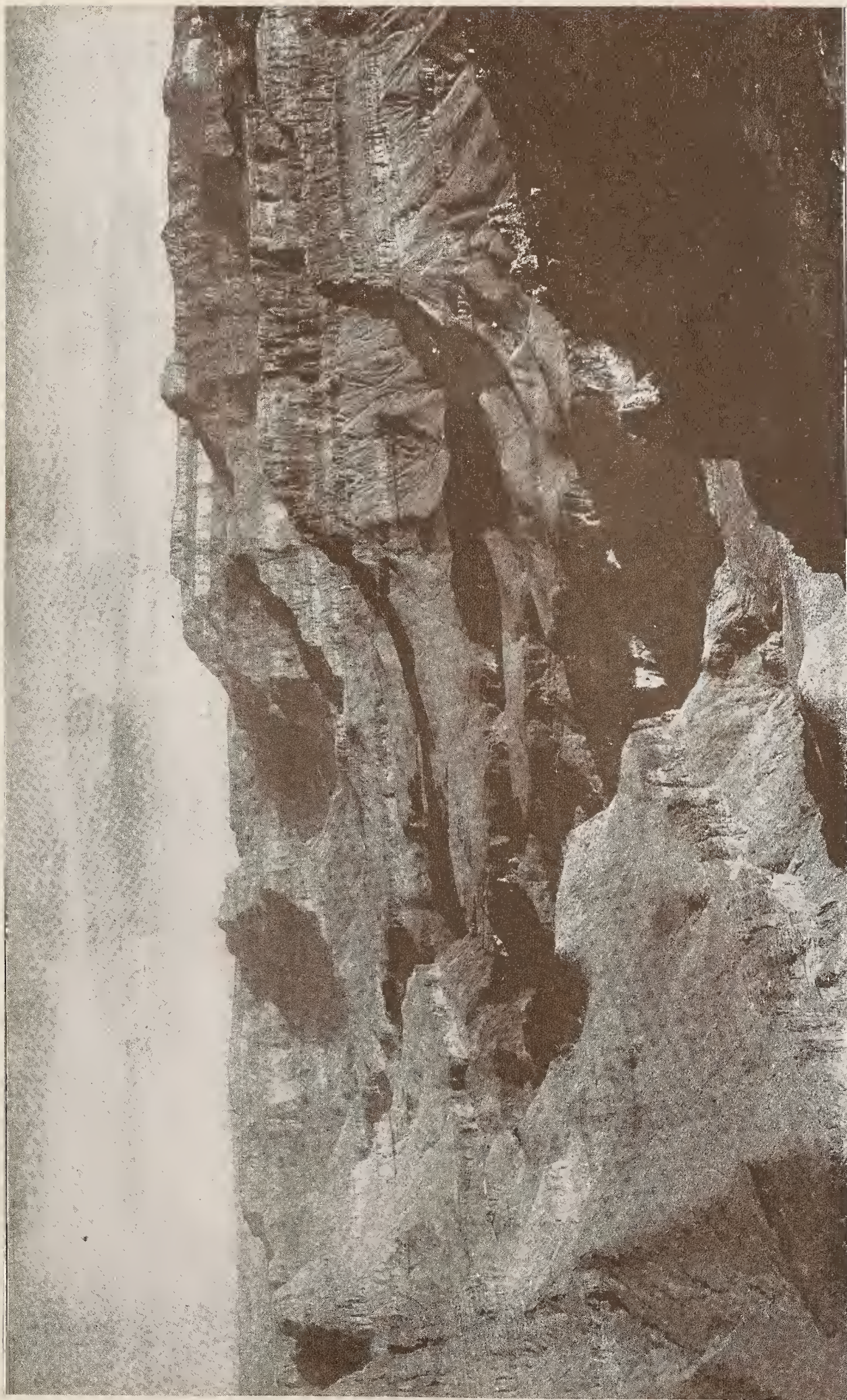




FROM COPYRIGHTED PHOTOGRAPH BY H. G. PEABODY, BOSTON

LOOKING ACROSS THE CANYON, FROM HEAD OF BRIGHT ANGEL TRAIL.





Copyright by Fred Harvey

"A GIGANTIC STATEMENT FOR EVEN NATURE TO MAKE ALL IN ONE MIGHTY STONE WORD. WILDNESS SO GODFUL, COSMIC, PRIME  
BESTOWS A NEW SENSE OF EARTH'S BEAUTY AND SIZE."—JOHN MUIR









*Copyright by Fred Harvey*

THE CELEBRATED JACOB'S LADDER ON THE BRIGHT ANGEL TRAIL

The photograph shows how broad and safe are the Grand Canyon trails. There is no danger in the descent





Robert & Powell



*Photograph by El Tovar Studio*

MEMORIAL JUST ERECTED BY THE DEPARTMENT OF THE INTERIOR TO MAJOR JOHN  
WESLEY POWELL

It stands on the rim at Sentinel Point. Upon the altar which crowns it will blaze ceremonial fires





CLOSING OF THE WORK OF THE HAYDEN SURVEY OF THE TERRITORIES.

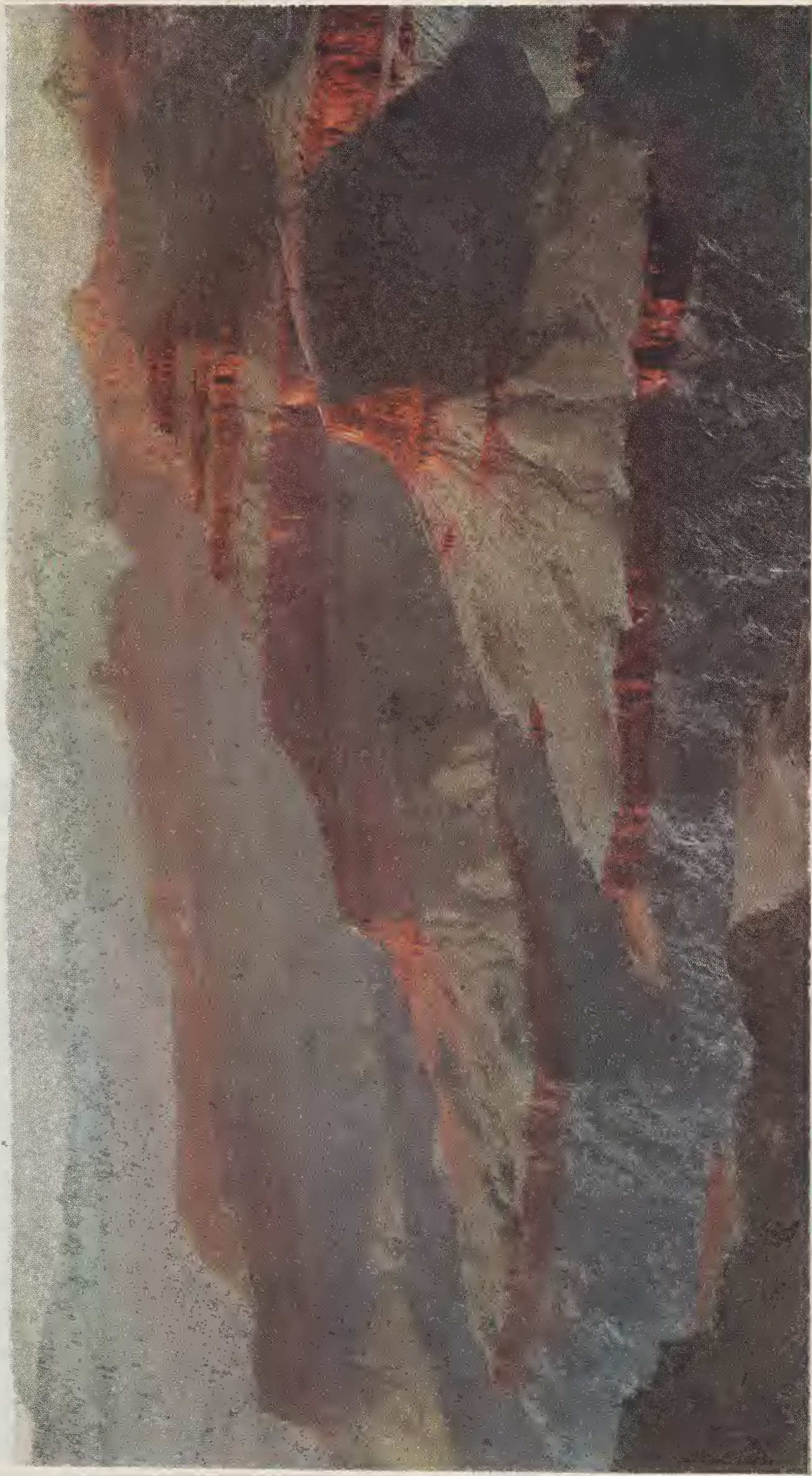
1880

After my return from work with Major Dutton in the Grand Canyon Region, I took up the difficult task of closing up the unfinished work of the Hayden Survey of the Territories which was largely financial and editorial. I had especially the work of putting through the press publications of important volumes by Cope, Shufeldt, Grote, Coues, Hoffman, Scudder, Lesquereux and Yarrow. I had gone to the Canyon with Dutton without definite appointment on the Survey and the regular appointment by Secretary Schurz on December 5, 1880 was dated back to my assignment with Major Dutton. Ten thousand dollars was allowed me for closing up the affairs of the Survey.

get copy of Davis letter  
regarding Cope's writing







GRAND CANYON, ARIZONA  
SUNSET FROM HOPI POINT

*Janus named canyon after  
the sun god, and the  
canyon is the great  
canyon.*





*Note added in 1926*

1880, 1881, 1882, 1883

The closing weeks of 1880 and much of the year 1881 were largely employed in the drawing of panoramic views of the Grand Canyon of the Colorado, the greatest achievement of my mountain-climbing period, already described. Attention was also given to the preparation of the maps which, associated with the panoramas, make one of the most conspicuous publications of the Survey. The panoramic work of this period was very much admired by Dr. de Margerie, <sup>the</sup> a French geologist, and many years later, 1921, he presented me with a splendid panoramic view in colors of the Alps, twenty-four feet in length, which later I turned over to the Geological Survey. De Margerie desiring to confer upon me an especial favor, had me made an honorary member of the French Alpine Club in 1926.

During the year 1880-1881 I had charge of the closing up of the business affairs of the Hayden Survey which had been discontinued by Congress in 1879. Field work was thus





brought to an abrupt close, but a number of members of the scientific staff were still engaged in completing important reports on their respective researches during previous years. It happened that there were about \$10,000 available for this work. These reports had to be finished and put through the press, and since the writers were scattered over the country the correspondence required proved quite a burden. Prominent among the scientists were E. D. Cope, Dr. Elliott <sup>U</sup>Cowes, Orestes St. John, O. C. Marsh and Dr. <sup>J. S.</sup>Newbury<sup>U</sup>. At the same time I had a number of my own unfinished papers and reports to look after, some of which are referred to by Dr. Powell in his introductions to the reports of 1881, 1882, and 1883 of the Bureau of Ethnology. Copies of these notices are included herewith.

It is not inappropriate that I should mention here that in 1883 I courted and married Miss Kate Clifton Osgood, of whom a notice published on the occasion of her death is  
(Mislead)  
here introduced. She was a handsome woman, as her portrait



shows, and very talented in many directions, art, literature,

*On 1884 I built my house at 1134 1/2 11th St N*

teaching and lecturing. I may note further that at this

particular time I occupied a studio in the Vernon Row Building

corner of Tenth Street and Pennsylvania Avenue, always before

*Today, Aug. 1928*

me as I sit at my desk in the Museum, top floor. My view

is up Tenth Street and over the roofs of the sheds of the

country peoples' market. Tenth Street is the chicken market

and where calves are butchered, one of the vilest spots to be

found in any city, and the country market is of the same dis-

reputable sort. Large Government buildings planned this

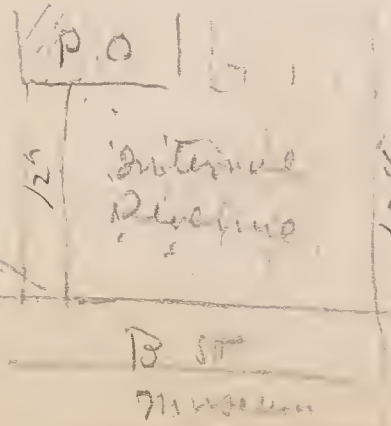
year, 1926, are expected to occupy this area as soon as they

can be built, and the market as a whole is to go elsewhere.

*Today, Sept 8<sup>th</sup> 1928. Excavations have been made covering several blocks and the foundations for the Internal Revenue Building are going in. 6 pile drivers and four excavating machines are at work under my window.*

*Great excavations for Commerce Bldg*

*Commerce Bldg*

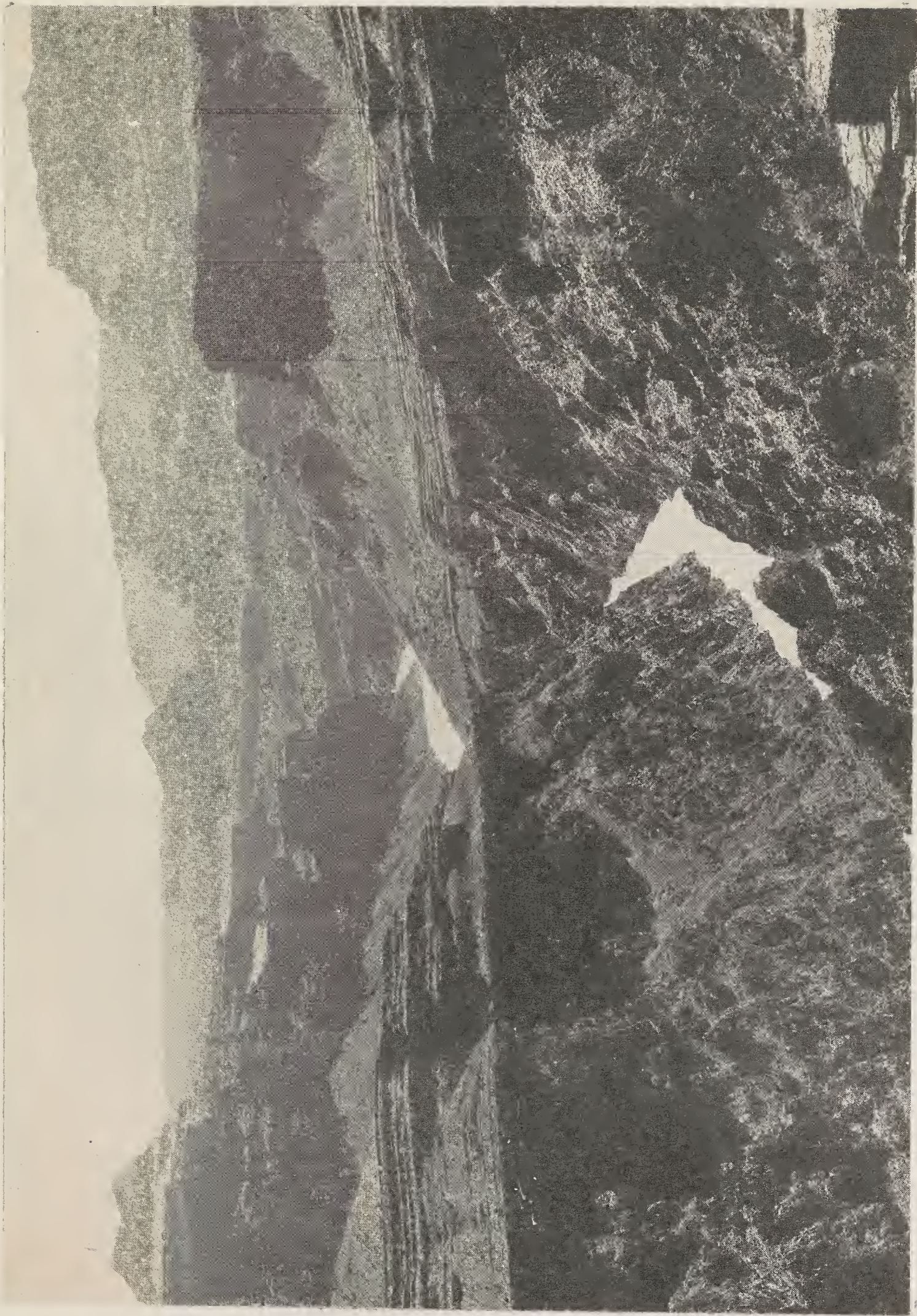


*Today, April 4 1930. The Internal Revenue Building is finished so far as the exterior is concerned, and the interior is going under roof. All in good shape.*

















Looking a Grand Canyon













H-1516 . NORTHWEST FROM PIMA POINT, GRAND CANYON NATIONAL PARK, ARIZONA

COPR. FRED HARVEY

Sent me by Miss Lila Medlin, Editor of Am. mag., at  
 while on a visit to Grand Canyon, April 1930.  
 Just 50 Years after my first there, 1880. W. H. Holmes  
 she reports on





## HOLMES TOWER, GRAND CANYON OF THE COLORADO

"Further explorations have since been made under the direction of the United States Geological Survey while Major Powell was its Director, and as a result Captain Clarence E. Dutton has published one of the most interesting monographs ever penned by a specialist. Its title is "The Tertiary History of the Grand Canyon District," and it is accompanied by a large atlas containing admirable pictures, etc., of the Grand Canyon region, - from sketches made by Mr. W. H. Holmes, the accomplished field geologist, artist, archaeologist, and writer, now in charge of the Anthropological Department of the United States National Museum. No praise bestowed upon these gentlemen, for the fidelity with which they have described this marvellous rock region, can ever be adequate return for the pleasure they have afforded those who have enjoyed the fruit of their labors."

("In and Around the Grand Canyon," by George Wharton James, p. 35) 1908.



## HOLMES TOWER

"To the north and west of Shiva Temple is a massive square rock-pile which I have named Holmes Tower, after that most genial and accomplished scientist in so many branches, Mr. W. H. Holmes. Geology not only owes him much for his charming drawings, which embellish Captain Dutton's canyon report, but archeology and ethnology are his great debtors, as a cursory survey of the reports of the Bureau of Ethnology will reveal. And it seems most appropriate that one of the great canyon monuments, which stood almost under his eyes as he sat on Point Sublime making his inimitable drawings, should receive his name.

"West of Confucius Temple is another great butte which is named Becker Butte, and between this and Holmes Tower, at the western extension of Shiva Temple, is Russell Butte, so named after the geologist who traced the beaches of the prehistoric Lake Lahontan. Beyond Russell Butte, and almost due west of Becker, is a square red tower named Gannet Tower, after the man whose topographical work has made world-famed the maps of the United States Geological Survey."

("In and Around the Grand Canyon," by George Wharton James, p. 92. (The Grand Canyon of the Colorado River in Arizona.)















TRIBUTE TO MEMORY OF MAJ. C. E. DUTTON

Army Officer Who Achieved Distinction in the Field  
of Science.

*W. H. H. H.*  
Maj. Clarence Edward Dutton of the bureau of ordnance,

U. S. A., who died at the home of his son in Englewood, N. J.,  
Thursday night, was well known in this city. He was a graduate  
of Yale, where he received the degree of A. B. in 1860, at the  
age of nineteen years. He served in the civil war, and in 1864  
was transferred to the ordnance department of the army. His  
scientific studies, which began at the Waterviliet Arsenal,  
took two directions—one toward vertebrate paleontology, the  
other toward steel.

Assigned to Washington in 1872.

About 1872 he was assigned to this city, where he met  
Prof. Henry and Maj. Powell, who increased his interest in  
geology and finally secured his detail to the Powell survey in  
1875. He made a special study of the high plateaus of Utah,  
the Grand Canyon of the Colorado and also of Mount Taylor and



the Zuni plateau, writing three large monographs of these subjects, which were published by the geological survey.

Scientific men of Washington, among whom he had many friends, say they remember best his paper before the Philosophical Society on the "Greater Problems of Physical Geology." in which he propounded his theory of isostasy to explain the folding of rocks and the oscillations of the earth's crust.

Maj. Dutton early became interested in volcanoes and visited Hawaii to see volcanoes in action that he might the better understand the extinct or nearly extinct ones of our own great volcanic field on the Pacific coast.

The Charleston earthquake in 1886 was the subject of his special investigation and report for the geological survey. Since his return to military duty and retirement he has published a most interesting and comprehensive volume on "Earthquakes in the Light of the new Seismology." His last contribution to Science, "Volcanoes and Radioactivity," was read before the Natural Academy of Sciences in 1906.





Maj. Dutton was a member of many scientific and other organizations, including the Philosophical Society of Washington, the American Geographical Society, the Academy of Political and Social Science, the Geographical Society of America and the National Academy of Science.





At the end of five years he was transferred to Frankford Arsenal, Philadelphia, and thence to Washington, D. C. Being cut off from immediate contact with steel, his thoughts concentrated upon geology, especially upon the physical side of the subject. He became a member of the Philosophical Society of Washington in 1872, and became acquainted with Professor Henry and Professor Baird, who took great interest in him. Through the former and Major Powell he was induced to consent to a detail for duty with the Powell Survey, beginning May 15, 1875.

*A. H. Holmes*

1. The first part of the paper is devoted to a general

discussion of the problem and the main results.

2. In the second part we consider the case of a

finite number of points and show that the

problem is solvable in this case.

3. In the third part we consider the case of an

infinite number of points and show that the

problem is solvable in this case.

4. In the fourth part we consider the case of a

finite number of points and show that the

U.S. Geological Survey Professional Paper 93  
Geology of the Navajo Country  
A Reconnaissance of parts of Arizona, New Mexico and  
Utah. By Herbert E. Gregory.

Silliman's Journal 3<sup>rd</sup> Series Vol. VIII 1874

Silliman's Journal 3<sup>rd</sup> Series Vol. XXIII 1892

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Proceedings of the Washington Academy of Sciences  
Vol. V, pp. 79-187  
John Wesley Powell. Plate I July 18, 1903  
Ingratulated Services. Proceedings of a meeting commemorative of his

Volcanoes & Radio Activity  
Read before the National Academy Apr. 17 1906  
Separate

Bulletin Philosophical Society. Vol VI. p. 30

DUTTON BOOK





## PANORAMA OF THE GRAND CANYON

I joined Major Dutton on the survey of the Grand Canyon of the Colorado on my return from Europe in 1880, and the result of my work during the season is embodied in the Atlas of the Grand Canyon district. I made the pencil drawing in three days and this drawing in pen with a color print over it is reproduced in the three sections of the Dutton Atlas of the Grand Canyon district.

### MEMOIR OF CLARENCE EDWARD DUTTON

BY J. S. DILLER

Major Clarence Edward Dutton, one of the first seismologists of his country, widely known for his reports on the Charleston earthquake, the high plateaus of Utah, and the Grand Canyon of the Colorado, was born May 15, 1841, at Wallingford, Connecticut, and died January 4, 1912, at Englewood, N. J. His parents were Samuel and Emily (Curtis) Dutton. At Ellington, Connecticut, he received his preliminary education, and in June 1856, entered Yale, where he graduated in 1860 with the degree of A. B., at the age of nineteen. April 18, 1864, he married Emeline C. Babcock, of New Haven, Connecticut.





He was appointed adjutant of the Twenty-first Connecticut Volunteers in September, 1862, and the following year, March 1, promoted to captaincy. In 1864 he was transferred to the Ordnance Corps of the Regular Army, and served through the remainder of the war. While assigned to the Watervliet Arsenal in 1865 he began his scientific studies, which, as he informed me, took two directions, and both were pursued with ardor. The first was invertebrate paleontology, under the guidance of Hall and Whitfield. The second was the study of steel, in cooperation with Alexander L. Holley, of the Bessemer Steel Works, of Troy.

At the end of five years he was transferred to Frankford Arsenal, Philadelphia, and thence to Washington, D. C. Being cut off from immediate contact with steel, his thoughts concentrated on geology, especially on the physical side of the subject. He became a member of the Philosophical Society of Washington in 1872, and met Professor Henry and Professor Baird, who took great interest in him. Through the former and Major Powell he was induced to consent to a detail for duty with the Powell Survey, beginning May 15, 1875.

He devoted ten years to the study of the great plateau region of the West, and published his results in the three reports entitled "The Geology of the High Plateaus of Utah" (6),<sup>1</sup> "The Tertiary History of the Grand Canyon District" (7), and "Mount Taylor and the Zuñi Plateau" (16). The plateau region of the West is remarkable, not only for the simplicity of its geological phenomena, but also for the variety and the enormous scale of the exposures.

Dutton's general conclusions are summarized in the closing chapter of the report on Mount Taylor and the Zuñi Plateau. Although contributing much to the geological history of the region, he evidently dwells with greater pleasure on the physical problems, and remarks, in describing the facts, that "not a trace of systematic plication has yet been found there," referring especially to the Zuñi part of the plateau region.

"The terms anticlinal and synclinal have almost dropped out of the vocabulary of the western geologist. The strata are often flexed, but the type of flexure is the monocline.

"The country at large shows no traces of a widespread, universal horizontal compression; on the contrary, it discloses the absence of such stress. We seem here to get nearer to the real nature of the process which has built the mountains. Shorn of that extreme complexity which confuses and bewilders us in more highly developed structures, the great central facts and the true essence of the mechanical processes involved become much clearer. The mountains of the West have not been produced by horizontal compression, but by the action of some unknown forces beneath, which have pushed them up."

<sup>1</sup> The numbers in ( ) refer to list at end of this article.

The greatest problems of physical geology, according to Dutton (21), are: First. What is the potential cause of volcanic action? Second. What is the cause of elevation and subsidence of restricted areas of the earth's surface? Third. What is the cause of the foldings, distortions, and fractures of the strata?

The first two of these he regarded as being without satisfactory explanation, and for the third he proposed a solution in elucidating his theory of isostasy. After having shown that the contractional hypothesis is quantitatively insufficient and qualitatively inapplicable in explaining the folding of the earth's crust, he presented in a modified form and greater detail the theory propounded many years ago by Babbage and Herschel. It was pointed out that the unloading of the land by erosion and the loading up of the sea floor by deposition resulted in a force which tends to push the loaded sea bottoms inward upon the unloaded land horizontally—a force of the precise kind that is wanted to explain the origin of systematic plication.

This view of the essentially isostatic condition of the earth, for which he invented the name *isostasy*, has been in recent years most ably advocated, and in fact practically demonstrated, by Prof. John F. Hayford.<sup>2</sup>

Dutton began the study of the volcanic problems early in his geological career, and his first papers in the Geological Survey (4) pertained to volcanic products. In his study of the plateau region he had abundant opportunity to observe an extensive and profoundly interesting series of complete and dissected volcanic as well as plutonic masses. In 1882 he visited the Hawaiian Islands to study Kilauea, Mauna Loa, and the other great volcanoes of that region (12) before beginning his survey of the great volcanic field of northern California and Oregon, where in 1885 he made a special study of Crater Lake and recognized its similarity to the great calderas of Hawaii (18).

He returned to military duty in September, 1890, and went to Central America and Lake Nicaragua. In 1891, while on duty at San Antonio, Texas, he made frequent excursions to the volcanoes of Mexico.

In 1899 he was recalled to duty in the office of the Chief of Ordnance in Washington, and on February 7, 1901, at his own request, was retired from active service.

One of Dutton's most notable contributions to science recognizes gravity as an essential factor in causing volcanic eruption. He was much

<sup>2</sup> The figure of the earth and isostasy. Coast and Geodetic Survey Report, 1909; also supplementary investigations. Coast and Geodetic Survey Report for 1910, and isostasy, a rejoinder to the article by Harmon Lewis. Journal of Geology, vol. xx, p. 562. Sept.-Oct., 1912.

Duty 1890

Duty 1899

Reynolds

1885-

1891

1901



impressed by Richthofen's order of succession in the eruption of massive rocks, beginning with propylite, a rock of intermediate composition, and followed by two series, one a lighter but less fusible acid series ending in rhyolite, and the other, a heavier though more fusible basic series, ending in basalt.

By a comparison of the chemical composition, density, fusibility, and physical aspects of these igneous rocks with one another and the lighter rocks up through which they were erupted, Dutton was led to the conclusion that "it is the gross weight of the overlying cover of solid rocks which presses the lava upward through any passage where it can find vent" (page 131, *Geology of High Plateaus*), and that the succession is a double sequence determined by density and fusibility. Concerning the origin of this view in his own mind, Dutton remarks (footnote, page 131, *Geology of High Plateaus*):

"It was when I was contemplating the great distances traversed by slender basalt streams in southern Utah that this theory suggested itself to me. I had no doubt that such lavas must have been ejected at a temperature much more than sufficient to melt them. This seemed to contrast powerfully with the habits of trachytic masses. It occurred to me then that this high temperature might be absolutely essential to the eruption of so dense a rock as basalt, while a considerably lower one would suffice for lighter rocks. Immediately the higher melting temperature of the rhyolites and trachytes suggested itself, and almost as quickly as I write it the theory took form in my mind and the double function of density and fusibility associated itself with a double sequence."

In a letter October, 1911, he writes:

"The subject of volcanoes and volcanic action had become of paramount interest to me, and I resolved to grapple with the problem. All existing theories seemed to me insufficient, and I became a confirmed skeptic as to the cause of volcanic action.

"From 1875 to 1885 I continued to labor with the problem, but could only conclude that the cause was the local accumulation of heat; yet no reason for it appeared. For a time it seemed possible that the intrusion of basaltic masses among the sedimentaries might lead to chemical reactions which would furnish the necessary heat, as Prof. Reginald A. Daly so ably proposes in his recent theory of volcanic action. But after long reflection I could not accept that view, and concluded that as science then stood a solution was impossible, and it would be necessary to wait until some discovery should put another face upon the subject.

"A discovery of prime importance—that of radioactivity—was made in 1897, which seemed to furnish the explanation of the necessary amount of heat near the earth's surface."

His final conclusions on volcanoes and radioactivity were presented to the National Academy of Sciences, April 17, 1906 (26).

1875-  
1885

1897

1906



Dutton made a special study of the Charleston earthquake in 1886 and devised a new method of ascertaining the depth of the earthquake focus, and measured with greater accuracy than ever before attained the rate at which an earthquake wave is propagated. His isoseismal method of computing the depth of focus involves the determination of two critical points: First, the epicentrum, and, second, a point on a radius from the epicentrum at which the intensity of shock diminishes most rapidly. A line drawn around the epicentrum through the points of most rapid change of intensity Dutton called index circle, and pointed out that the focal depth is the product of the radius on the index circle multiplied by the square root of three.

The Charleston earthquake had two foci. The depth of the Woodstock focus he computed to be twelve miles and of the Rantowles focus nearly eight miles. The determination of the index circle, as Dutton himself recognized, is a matter of difficulty, and the conclusions must be regarded as only approximate.

Concerning the rate of propagation, he remarks (22, page 211):

"After a careful study of all discussions of this particular problem, based upon the observations made in other earthquakes, I have no hesitation in declaring my opinion that the result from the Charleston earthquake far outweighs them all, and that all preceding determinations of this quantity are wholly invalid or wide of the mark."

The average speed of propagation of the Charleston earthquake Dutton determined from three groups of observations to be 5,184 meters per second. He devoted much consideration to the nature and mechanism of the earthquake wave motion.

After his retirement, with abundant time at his disposal, his active mind was much employed in the further study of volcanoes and earthquakes. His latest publication on the latter subject is a book entitled "Earthquakes in the Light of the New Seismology," a most comprehensive, instructive, and useful contribution to popular knowledge. To quote his own words:

"Chapter I sets forth the nature of an earthquake according to the modern concepts. It defines the technical terms used in discussion, and describes the action taking place on the surface of the ground during a quake of great energy. Chapter II is a general discussion of the causes of earthquakes. Two causes are recognized, apparently quite distinct, though possibly they may have interrelations not yet recognized. The first cause is volcanic; the second is that force which is presumed to be always active in disturbing the rocks which form the outer shell of the earth, resulting in the building of mountains, the folding and shearing of the strata, and the elevation and depression

Charleston Earthquake

1886

1901

what date  
1904

I

Chapter II

of the earth's crust. Thus we have two groups of quakes, volcanic and tectonic. They have in many cases distinct characteristics, and these are described in chapters III and IV."

"The more important instruments used in seismometry are described in chapters V and VI, and chapter VII discusses the details of seismic vibratory motion and explains the four kinds of waves with which the inquiry deals.

A chapter (VIII) is given to the amplitude and period of vibration, and two chapters (IX and X) to the subject of intensity. The chapter on the variation of intensity points out the method of computing the depth of origin of an earthquake wherever observations sufficient in number and accuracy can be obtained.

"The speed of propagation of seismic vibrations is then treated (XI and XII). No specific problem in connection with earthquakes has been more diligently investigated, and few are so difficult as this. It is only very recently that definite results upon this question have been reached. The chief trouble has been the great complexity of the waves generated by an earthquake, their different rates of propagation, and the difficulty of separating one kind from another. Nor was it known until recently that some kinds of waves are propagated through the earth-mass, while others go around it.

"Since the speed of propagation depends wholly upon the ratio of elasticity to density, it becomes an index of those properties in the materials which compose the earth's interior. Chapter XIII is given to the discussion of this aspect of the subject."

The subject of earthquake distribution or seismic geography is treated in two chapters (XIV and XV), and the final chapter (XVI) is devoted to seaquakes.

As an observer, Dutton was quick to grasp the comprehensive, though not overlooking details, and in the field gave most of his attention to the greater problems. As he puts it (Sixth Ann. Rept., page 198):

"I am fond of viewing the facts observed in the field in their relation to broader and more general facts, and of marshaling them into their proper places."

His method of work in preparing his reports was determined largely by his strong imagination. He made but little use of field notes excepting for figures. Shutting out all other matters from his mind, even to the neglect of personal correspondence, and without preparing a written plan or preliminary draft, he read much and discussed with his colleagues. He held the subject wholly in mind until his problems were solved and results fully attained before beginning to write; but when ready he penned all his own manuscripts rapidly under the stimulus of

III IV

V VI

VII

VIII IX

X

XI XII

XIII

XIV

XV

XVI



an enthusiasm begotten by a consciousness of his comprehensive and complete knowledge of the subject.

Macaulay was his favorite author, and doubtless had much influence in forming Dutton's style, which is perhaps best exemplified in his "Tertiary History of the Grand Canyon District," where he remarks (page viii):

"I have in many places departed from the severe ascetic style which has become conventional in scientific monographs. Perhaps no apology is called for. Under ordinary circumstances the ascetic discipline is necessary. Give the imagination an inch and it is apt to take an ell, and the fundamental requirement of scientific method—accuracy of statement—is imperiled. But in the Grand Canyon district there is no such danger. The stimulants which are demoralizing elsewhere are necessary here to exalt the mind sufficiently to comprehend the sublimity of the subjects. Their sublimity has in fact been hitherto underrated. Great as is the fame of the Grand Canyon of the Colorado, the half remains untold."

For years he smoked vigorously at his work, but in later life he desisted. At one time he became greatly interested in the matter of stamps and was employed by the Government to make its Centennial stamp collection.

He gave much attention to the Far Eastern question, and for amusement during the leisure hours of later years he wrote a book on China, but it did not reach publication.

His mind, well filled with readily available knowledge on many subjects, gave him unusual power as a conversationalist, and he was fond of discussion, especially with his compeers, G. K. Gilbert and W. J. Powell, the other members of a devoted trio, of whom in acknowledgment he generously remarked, "If I paid them their intellectual dues I would be bankrupt."

Though somewhat austere, Dutton had many friends. He was a kind, lovable, generous man, with high ideals and an intense hatred of shams. His last message was: "Farewell to my old friends on the Geological Survey."

It is said "he knew the end was at hand, and he met it calmly like the philosopher he was. Apparently he just fell asleep."

He died January 4, 1912, of arterio-sclerosis, at the home of his son, in Englewood, New Jersey. His wife, Emeline C. Dutton, still resides at the same place, but his son, Clarence E. Dutton, is now at Edgartown, Massachusetts.

Major Dutton was a member of many scientific and other organizations, among which may be mentioned the Philosophical Society of Wash-



ington, the American Geographical Society, the Academy of Political and Social Science, the Geological Society of America, the Seismological Society of America, and the National Academy of Sciences.

In his writings Major Dutton had a most vigorous and impressive style. His choice of words is of the best—euphonious, simple, but full of force and interest. His phraseology is direct, winning the attention of the reader and holding it throughout. He may be justly considered one of the best writers of popular geological science of his day.

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VOLUME V

SECTION III, 1884      Trip to Mexico with Mr. and Mrs.  
Chain and W. H. Jackson, photogra-  
phers.

Illustrations.





W. H. Holmes      servant, Mrs. Charn, Mr. Charn W. H. Jackson,  
The Charn photographic party in museum, 1892





TRIP TO MEXICO

*with the chains & W. H. Jackson*  
1884

In April, 1884, the monotony of home-staying and office work were broken by a trip to Mexico as the guest of

Mr. and Mrs. Chain who had the privilege of using a special

*generously assigned to the party by President Breckinridge of the*  
car which, with W. H. Jackson, photographer, we took at *Santa Fe line,*

El Paso, Texas. The Chains also were photographers, and

Mrs. Chain was a painter in oil colors.

It was a delightful excursion of two months, with visits to Mexico City, Puebla, Zacatecas, Chihuahua, Oaxaca, Texcoco, Cholula and other places of note, and gave me the opportunity of studying peoples, museums, ancient ruins and the great mountains. The photographs herewith will give a good idea of the car, its accommodations and <sup>its</sup> the occupants.

I had the opportunity of studying the present arts of the people, gave attention especially to pottery making and looked into the fabrication of imitations of old time wares.







W. Holmes. Mrs. Chalm. Hotel Proprietor.

W. Jackson.

at dinner in Puebla, Mexico

Mrs. Chalm. Hotel Proprietor.



LEGACION MEXICANA,  
WASHINGTON, D.C.

Marzo 26 de 1884

Mr. Don Alfonso Herrera  
Mexico

Muy estimado amigo y Sr.:

El Profesor Spencer F. Baird  
del Instituto Smithsonian, me ha escrito  
recomendándome muy especialmente a  
Mr. William H. Holmes, relacionado con  
el Museo Nacional y la Sección Etno-  
lógica de esta capital, quien se propone  
visitar a México con el objeto de esta-  
diar las antigüedades del Museo Na-  
cional de esa ciudad. Obsequiando la  
súplica del mencionado Profesor Baird,  
ruego a Ud. que atienda a Mr. Holmes  
en lo que le fuere posible para facilitarle  
la consecución del objeto que lo lleva a  
nuestro país, y esté Ud. seguro de que lo  
que fuere por el, será estimado como  
un favor personal por su afmo amigo  
atento y S.S.

M. Romero.





A.  
PENCER F. BAIRD,  
SECRETARY.

# Smithsonian Institution

Washington, D. C., March 27, 1884,

Dear Sir:

I beg to introduce to you Mr. Holmes, a distinguished artist, geologist, and archaeologist connected with the United States Geological Survey and the Bureau of Ethnology, as also one of the Curators of the National Museum.

He can tell you what we are doing in Washington in the line of science.

His special interest is in the photographing and

reproducing in plaster  
of some of the monuments  
of Mexican antiquity, and  
any help given him in  
this direction will be gladly  
acknowledged by us.

Has the Smithsonian Institution ever  
sent to the National Pre-  
paratory School of Mexico  
a series illustrating the  
marine zoölogy of the  
North Atlantic? If not,  
will give me great pleasure  
to transmit at once a col-  
lection of from 100 to 200  
species, containing a great  
many of the principal



A.  
Smithsonian Institution

PENCER F. BAIRD,  
SECRETARY.

(3) Washington, D.C., \_\_\_\_\_ 188\_\_\_\_\_

families and genera.

Yours truly,

Spencer Baird

Secretary

Prof. Alfonso Herrera,

Director National Prepara-  
-tory School,  
City of Mexico.



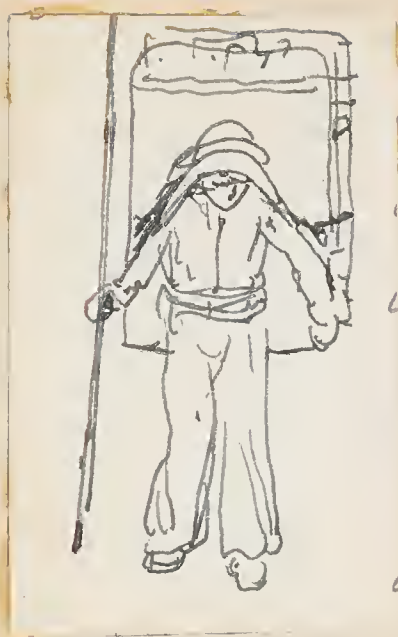
CHURCH OF THE GUADELOUPE, MEXICO

(Extract from a letter to Mrs. Holmes)

At two o'clock <sup>April 1884</sup> Jackson and I set out for the Church of Guadeloupe which lies on the north side of the valley against the foot-hills a mile or two from the city. We took the street cars up to the Grand Plaza thence by another line out across the flat fields to the north. It was a charming ride. The street cars here are well managed. The cars themselves are shipped from New York or some other northern city and the tracks are extremely well <sup>laid</sup> made. We asked the driver in our purest Castilian if this were the car for Guadeloupe and were answered "Si, Senor." We rattled along at a break-neck pace drawn by two mules, first down a picturesque street with old palaces and churches on all hands with markets and pulque shops and all sorts of stores open. The streets were lined with people -- some dressed in our own fashion, but nearly all in the simple costume of the country. The poorer -- nearly all are poor -- looking awfully like Indians, the which they really are, and hardly less rough, dirty and pitiful than the wildest pai-ute. They are sitting on the side walks, in the streets and in the gutter, talking, preparing the rude tortillas or cakes or selling some small articles to the passerby. They grind their corn on a big "metate" like the pueblo Indians, knead their dough and bake the greasy garlicky mess right where they sit. The men wear a shirt, a broad straw hat and loose pants of white muslin.







Flocks of them go along carrying huge loads like this, or drive poor little starved donkeys with loads big enough for wagons, like this;



An Aztec Donkey

and more interesting than all, the professional water carriers *who* trot along from the fountains to their patrons looking like this -- one great canteen upon the back and a big pitcher in front. The straps across the head. You can imagine how fine they are. The women are not so good. They are squaws in calico -- what little they have of it. Most of them are so -- with a baby --



or so, without.







The babies may have clothes on or they may not -- ad lib.

But I must go on to Guadeloupe. We passed out into the country with green fields and trees and dirty canals. At the end of a long avenue we could see the Church with four steeples and a dome -- all of a rich and ornate character. Behind the church on a high hill was a little chapel, just like many old Italian examples. We passed around behind the church and by a curious zigzag stone stairway climbed up to the chapel. From the front door we could look down upon the steeples, domes and flat roof of the great church and out over them, across the plain, to the city and the lakes and the mountains beyond. We were unfortunately unable to see the <sup>great</sup> Popocatepetl on account of the mists. It was hard to realize that this was the <sup>is</sup> ~~far~~-famed valley of Mexico where the Aztecs and Toltecs built their teocalli<sup>6</sup> and sacrificed their human victims, where Cortez came and conquered, where Scott and Taylor fought and won and where poor Maximillian suffered death ---- Well!



Mexico, 3/29, 1886.

W. H. Holmes,

Smithsonian.

Dear Mr. Holmes:

I have said "yes" to Prof. Baird's proposition but cannot cross the Rio Grande until May 10th or 11th. Father Fischer is very much out of humor because I offered to take \$1250.00 but I would rather get that from the Smithsonian than hold on the hopes of getting twice that sum from private party, later.

Thanks for the Science and your article on the Monoliths of Teotihuacan. I took a quiet pleasure in showing Barcena and Sandrez how they had permitted a disciple of "original research" to have the honor of throwing some clear light on the "painting stone" question. After reading your article no sensible man will have any doubts on the matter. I was out to the Pyramids last week, to see what Batres is doing. He is a fraud - has done nothing but manage to get himself interviewed about twice a week. He is not only a fraud but a swindler. The only rock crystal skull of any value is the one I got in the Fischer Collection. Well, Frenchman named Boban - who has a private museum, here - and is a member of various French Societies and seems to be very intelligent, al-





though not honest, brought from Germany a glass skull made to imitate rock crystal. Batres persuaded him into a partnership to defraud the National Museum, by selling it as genuine rock crystal from Orizaba for \$3,000. Sanchez was on the point of buying it but first had Dr. Kaska examine it who at once pronounced it glass and the two busy B's are under a cloud. Doban has closed his museum and will remove it to New York, soon. Look out for him: He hopes to sell a great many things to the Smithsonian. He has some valuable antiquities but his ownership of them gives them a suspicious character. He has for example a magnificent collection of the immense iron stirrups used by the Conquerors.

Father Fischer thinks you are a little too sweeping in your condemnation of the black ware. I stumbled upon the factory at Teotihuacan where the modern stuff is made. But Fischer says that this art is handed down in certain families from father to son for generations and that the makers themselves cannot tell a piece 50 years old from one 300 years old, as all are made precisely alike.

Will you send Father Fischer a copy of your Monoliths? He has read mine and is greatly pleased with it. He also asks to be remembered with the publications





of the Bureau of Ethnology if it can be done. He borrows mine to read and hates to return them. He is one of the most learned men in Mexico and can make good use of his books.

Yours as ever,

/s/ W. W. Blake



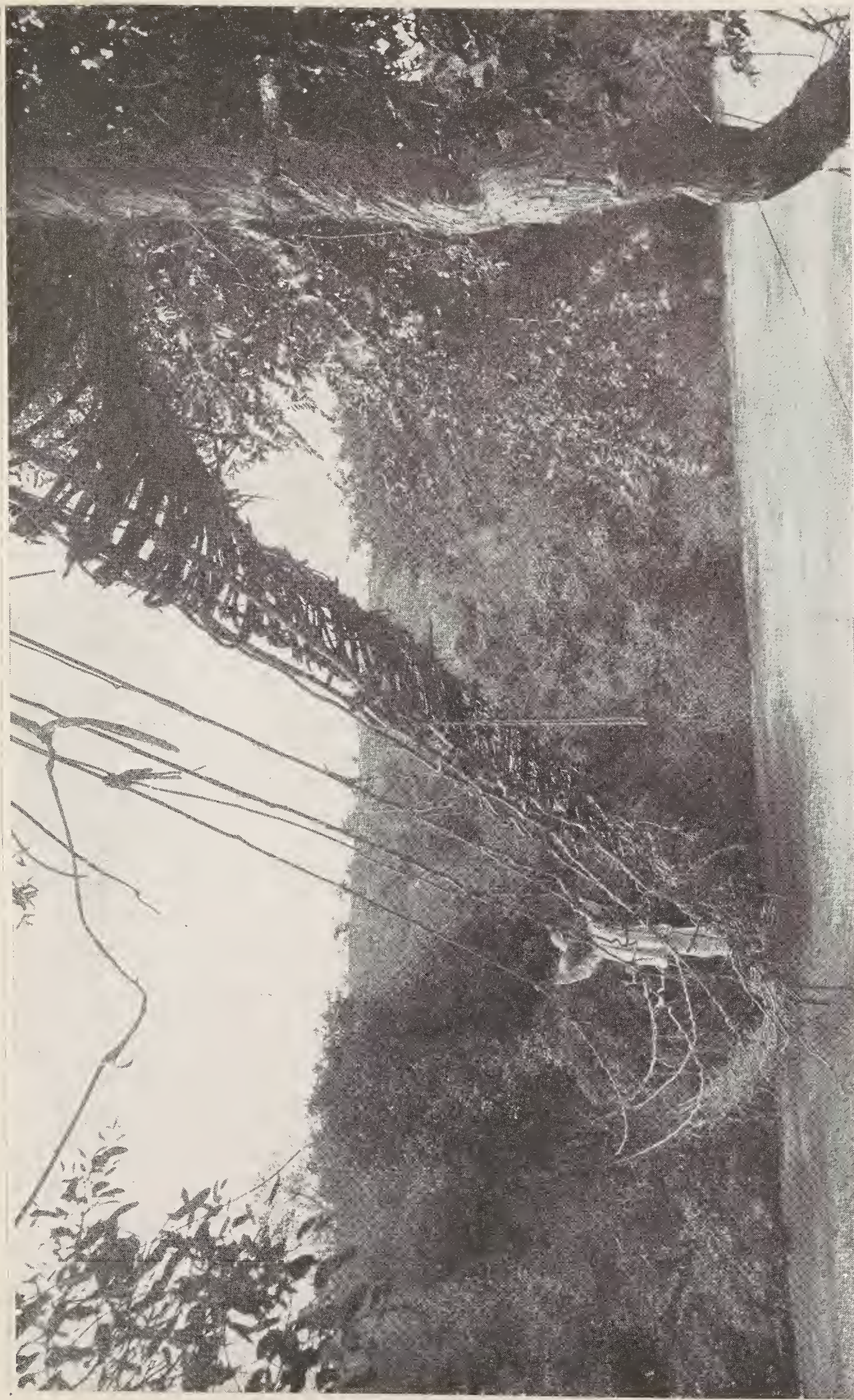


In the Market, Mexico









A VINE BRIDGE SPANNING A MEXICAN RIVER

In the art of making use of things provided by Nature-at-hand rather than by Industry-at-a-distance, the Mexican is something of a genius. He can build a bridge with no other tool than a machete, a wagon without a nail or a screw, and a house without a piece of iron in its construction. He does not need to go back to Nature—he has always been there.

















Pollery dealers station

















Mexican Water Carriers









Water Brigade of Querétaro.  
Wm. Jackson photo 1882





The picturesque water jars of Guanajuato  
now a thing of the past  
W.H. Jackson photo. 1882







Mexican Water Carriers





5661. MEXICAN CARRETA. CHIHUAHUA.



1885

The year 1884, after my return from Mexico, and the succeeding year, 1885, passed without any particular thrill or event of importance other than the current expositions. The work of exploration and preparation of reports and of special papers was kept up and carried forward as usual, as briefly indicated in the extracts from the annual reports of the Bureau, copies of which are enclosed herewith. All may be found in extenso in the reports of these years, and in certain other publications.

Report on the Davenport academy







White Photo



























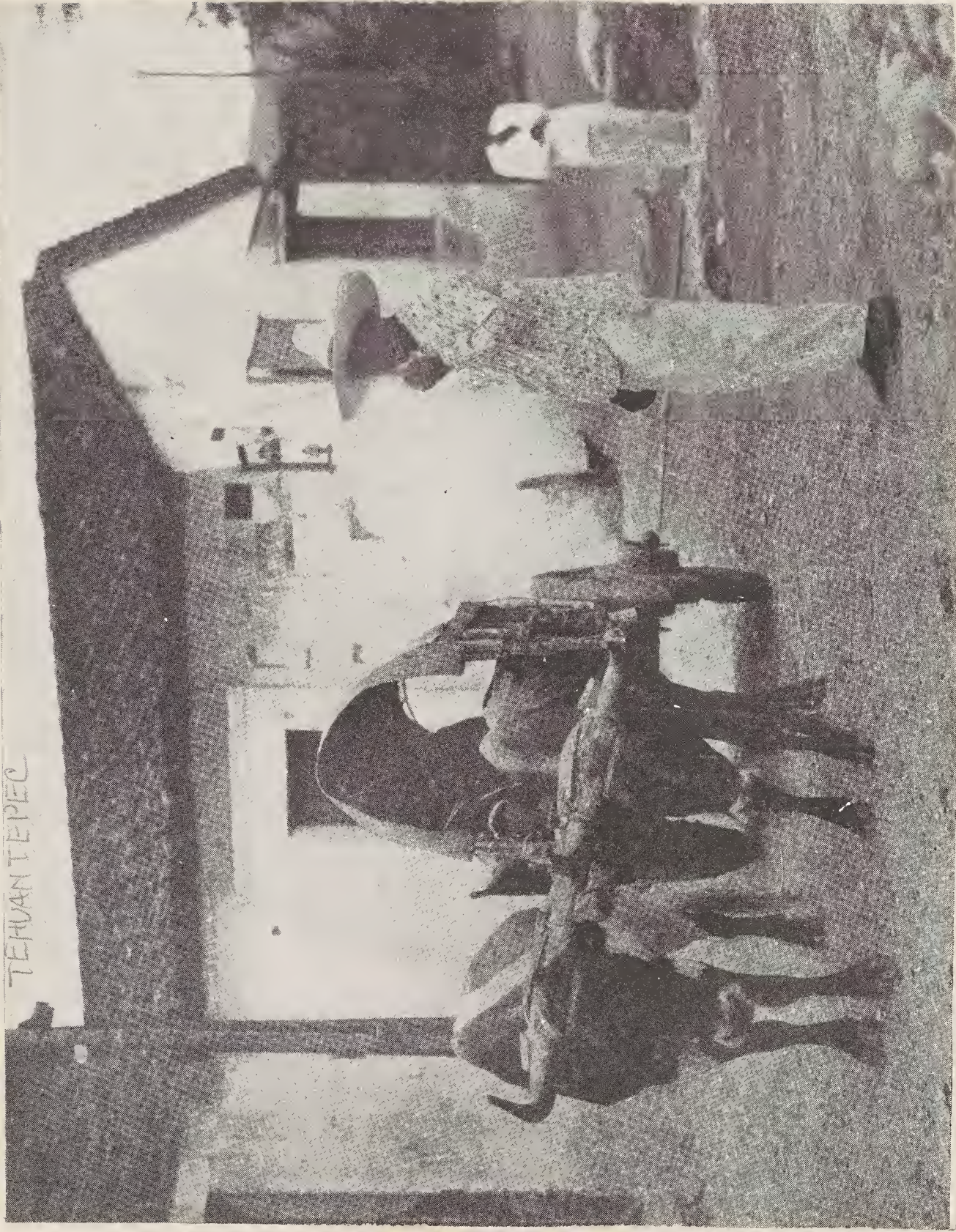








TEHUANTEPEC



Mexico











VOLUME V

SECTION IV, 1886-87      In Rocky Mountains with  
Langley and Powell. Adven-  
tures and Disaster.

Ancient Ruins.

The Mother Squirrel and the Snake.

The Bear Story.

Remarkable Scenery.







The great mountain, Colorado





ARCHEOLOGY AND ADVENTURE IN THE JEMEZ MOUNTAINS, NEW MEXICO

*fiscal*

1886-7, 1887-8

The closing months of 1886 and the first six months of 1887 were devoted to the continuation of the archeologic and other work begun in preceding years, utilizing such portions of my time as were not absorbed in work pertaining to the U. S. Geological Survey. A paper on the antiquities of Chiriqui and one on textile art in its relation to form and ornament, prepared for the Sixth Annual Report, were completed and proofs were read. During the year work was begun upon a review of the ceramic art of Mexico. A special paper, with twenty illustrations, on a remarkable group of spurious antiquities belonging to that country, was prepared and turned over to the Smithsonian Institution for publication. In addition, a preliminary study of the prehistoric textile fabrics of Peru was begun, and a short paper with numerous illustrations was written. As in former years, I superintended the preparation of drawings and engravings for the Bureau publications. The number of illustrations prepared during the year amounted to 650.

Early in August <sup>1887</sup> I had the good fortune to join a party of Smithsonian and other folks for a period of study of the tribes and ancient ruins of New Mexico and Arizona. In the party were S. P. Langley, Secretary of the Institution, Major Powell, Director of the Geological Survey and Bureau of American





Ethnology, James Stevenson, Powell's right-hand man, Victor Mindeleff, young Mr. Black, Mr. Warman, Powell's secretary, and myself. The party established a permanent camp in San Diego Valley or Canyon, a tributary of the Rio Grande, New Mexico, fifty miles west of Santa Fe, with the village of Jemez near by and the Jemez Mountains rising on the west. The members of the party were soon separated for carrying out their respective researches.

I had the pleasure of examining fifteen important ruined pueblos and village sites. They correspond closely in type to those previously examined farther north and bear evidence in most cases of pre-Spanish occupation. Besides the larger village ruins there are a multitude of minor ones, small houses and lodges of stone, scattered through the forests. I had previously carried my investigations of the ruins of Colorado and New Mexico as far south as Abiquiu, which village lies at the northern end of the group of mountains in which the Rio Jemez takes its rise. My work of this year, therefore, enabled me to connect the studies of the northern localities with those of the south, in which the numerous modern pueblos are situated. The chain of observations thus secured we expected to be of value in the study of the art products of the vast region formerly occupied by town-building tribes.

Particular attention was given to an examination of the ceramic remains. These constitute one of the most important means of developing the history of the pre-Columbian inhabitants and a large series of specimens was forwarded to the National Museum. (Pages XXIX - XXX.)





Two interesting episodes of the work of the year in the Jemez region are recorded in letters to Mrs. Holmes:

1887

### THE BEAR STORY

For a long way I rode up over an ancient village, then up sharp ridges among the timber until I came to a flat-tish timbered shelf that lies along the base of the final ascent. Here at the elevation of about 1000 feet above camp I found many small ruins and some pottery. The final step of the plateau consists first of a steep slope up which I had to lead my mule zig-zagging back and forth over the rocks and slides. This slope ends against the base of the capping cliff which is in the main nearly vertical and from 100 to 300 feet high. It extends so for many miles. I hitched my mule on a little shelf at the base of this cliff and began to look for a place reduced or broken down sufficiently to let me climb it.

As I skirted the base of the cliff to the right I happened to look down the steep slope below and there, about 40 feet away, was a grizzly bear. He was nosing along and did not see me but he was going right toward my mule and I concluded very quickly that that would not do for by going 20 feet further he would give my mule such a fright that he would break loose and rush down the mountain. I had no gun or pistol so I shouted "Boo, hoo," at him. He glanced up quickly and saw me, and made a spring away from me, facing down the steep slope. At this moment I picked up a big stone and sent it after him, flying. The result was too funny for anything. The mountain was very





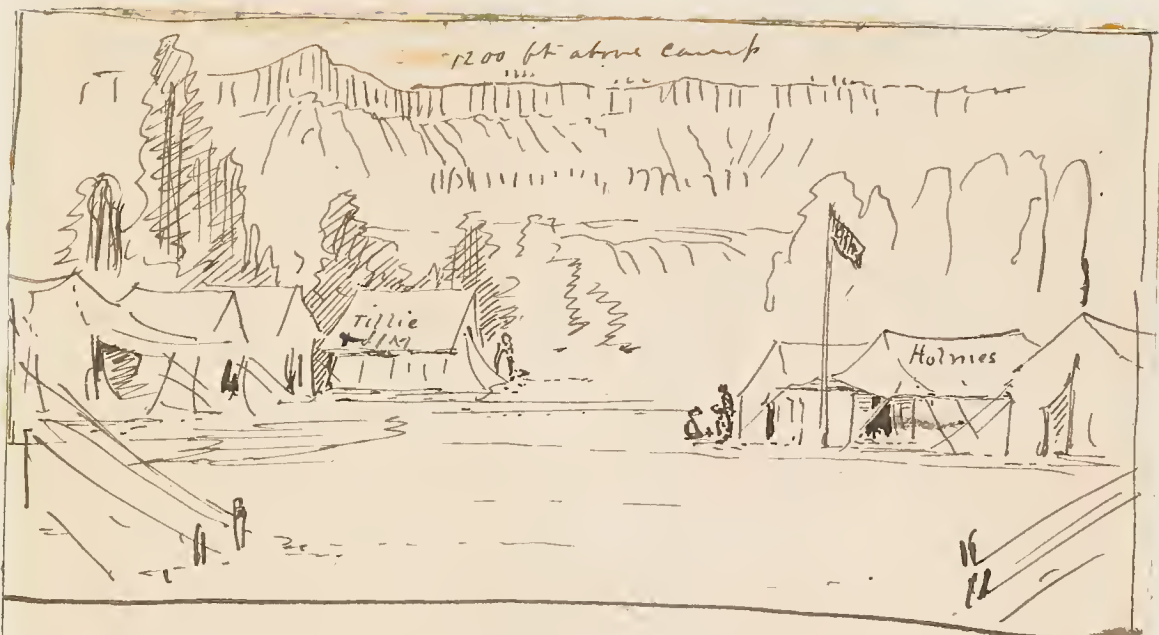
steep for a long distance below and covered with loose stones and scattering trees. Down this slope the bear plunged and the big stone and many other loosened stones after him, rattle, bang, crash, until the cliffs re-echoed the uproar. I never saw a beast made such time and the stones were more rapid than he and made enormous leaps until they caught up with him and both, with many added stones, went out of sight together down into a rocky gorge nearly half a mile below me. It was a laughable termination of the incident, but a good riddance of an ugly customer.

I soon reached the top of the cliff by a very ticklish trail, pulling myself up by little notches in the rocks, and the gooseberry bushes that grow in the crevices. I had a broad view of the valley and the surrounding mountains, made a sketch and cut my initials and the date in the rock that forms the extreme point of a projecting cape of the plateau and then, on account of a thunder storm which suddenly broke across the plateau I hurried down to my mule. In the rain I pulled my mule by main force down the steep mountain nearly all the way to camp.

Taking a different course from the ascent I encountered a cliff midway in the slope and had a hard time, going back again and taking another spur and getting into camp late, wet and tired. The boys were quite excited that a bear should be so near and wanted to go on a hunt.



from a letter to Mrs Holmes



This promising sketch will give you a more or less lucid perception of our camp. Tent stakes, in fore ground, ground, tents, flag, trees, bluff, mesa slope, cap of mesa, sky, in order as you read.

Camp, San Diego valley  
50 miles west of Santa Fe, 1887





## THE SQUIRREL AND SNAKE STORY

The monotony of camp life was broken yesterday evening, August 22, by a little episode which may be of interest to you. I crossed the creek to take a short stroll in the woods that border the valley on that side. Presently I noticed what I supposed to be two squirrels fighting or quarreling in a tree some thirty feet above the ground. The chattering was spasmodic and seemingly agonizing. In the top of the tree was a nest. Surprised at the extraordinary activity displayed I stopped to look and soon concluded it was not two squirrels but one squirrel fighting some other creature - perhaps a snake. In order to settle the matter I went back to camp and got my field glasses and pistol. With the aid of the glasses I soon discovered a large snake coiled up on a large branch near where it joined the trunk, some twenty-five feet above the ground. The squirrel was fighting for her young. I watched her vain attempts to dislodge the snake. She would spring from above so as to graze the reptile as she descended, turning <sup>quickly</sup> ~~gradually~~ aside just in time to avoid the serpent's thrust with open mouth, falling off among the branches below and scrambling up again to renew the attack. Again she would run along the branch chattering until within a foot of the reflexed head of the snake where she would spring back and forth threatening to jump, but always passing to one side fearing to be caught, yet hoping always to throw the serpent off his balance and get rid of him.





When she had exhausted every possible means of driving him off, she suddenly turned about, ran up to the nest above and seized a young one in her mouth and running down past the snake on the opposite side of the tree, made her way into a neighboring tree. She was chattering all the time and fumbling and fondling the young one. She was not satisfied but kept coming back and I soon found out why -- I shot the snake and he came tumbling down, and as I reached him I was startled by what I saw -- the snake had two legs, a new feature in snakedom and I felt myself on the verge of a great discovery. The mystery was soon explained, however. A young squirrel had been swallowed and two of its legs were protruding from the bullet holes on the opposite side of the snake's body. The distress of the mother squirrel was pathetic, and after depositing the young one in the neighboring oak, she came back again and again looking for the lost one.

The motherly care of the squirrel for her young, and the human-like intelligence which led her, when she realized that her most strenuous efforts were in vain, to turn about and save the other babe, carrying it down the opposite side of the tree to make sure of saving it from the fangs of the serpent were wonderful.

I carried the snake to camp where it was an object of much interest and later I made a sketch of the battle in the tree. I shot three times - each shot taking effect - the last one, tearing the beast's head all to pieces, brought him down.





THE END OF THE YEAR 1887-8

My letters home recite the many interesting events occurring from day to day in our camp life and our explorations among the ruins, the Indian pueblos and the rugged mountains and charming valleys, but my season's work came to a sudden close. About the end of September I joined Major Powell in a mountain excursion and one afternoon, descending on horseback from a high peak, I had the misfortune to suffer a serious injury. The Major rode a large, free-going horse and I rode a pony, convenient for mounting and dismounting in the gathering of specimens and the making of sketches. This pony had a gait, when on good roads, as comfortable as a rocking chair, but he had stiff forelegs and coming down the mountain trail, trying to keep up with Powell, I suffered from the constant jar and by the time we reached camp my back was broken, or near-about, and I became quite helpless. The injury was so serious that Stevenson constructed a litter of long poles on which, with a mule attached, I was placed and drawn out to the railway and sent home. Mrs. Stevenson aided materially in caring for me, and in due course I arrived safely in Washington.

The only correspondence or note I have of this episode is a brief letter from Colonel Stevenson written in answer to a letter from Mrs. Holmes thanking him for his care of me. This letter is as follows:





LETTER FROM JAMES STEVENSON ABOUT MY DISASTER

Bernalillo, N. M.  
October 9, 1887

Dear Mrs. Holmes:

If you will excuse the note paper I am using, I will drop you a line to acknowledge the receipt of your kind letter of thanks to Mrs. Stevenson and myself for the little we did for your husband while ill in camp. Mrs. Stevenson did all she could under the circumstances. Mr. Holmes was a very ill man and when I constructed a machine to drag him out of the mountains, I had but little hopes of getting him in safety to the railroad. I am glad, however, to learn that he has reached you in as good a condition as he has.

I am here to assist Professor Langley home. He left for the East at 2 this A.M. Mrs. Stevenson and I will remain out considerably later to work among some of the Pueblo.

Please present Mr. Holmes our best wishes and gratification that he is at home.

With great sincerity from Mrs. Stevenson and myself, I am

Truly yours,

/s/ JAS. STEVENSON.







84. LOOKING NORTH FROM THE MOUTH OF THE BLU. JAMES LE PARK.

*W. H. Holmes*





Monument Park, Idaho













Photograph by S. M. YOUNG, 1909

#### RAINBOW BRIDGE FROM DOWN STREAM

This first view of the Arch from its west side shows it in its most gracious and beautiful proportions. It is of red sandstone, spanning 278 feet. Its apex rises 309 feet above its base. The Flatiron Building, New York City, with three stories added, could stand beneath it.



# THEIR "INCOMPARABLE SCENIC GRANDEUR"

*"Areas Whose Principal Qualification is Adaptability for Recreation  
are Not of National Park Calibre"*

By STEPHEN T. MATHER  
*Director of the National Park Service*

THE national park system of the United States is unique both in its scenic exhibits and in the exceedingly high standards by which each candidate for admission to the system is judged. As now constituted, it is made up of areas of incomparable scenic grandeur. Each of the major national parks was selected for parkhood because of some distinctive feature, either scenic or prehistoric, which is of national importance and interest. Under the policy governing the establishment of national parks, only one area of a particular type is considered for inclusion in the system, and each area selected must represent the highest example of its particular type.

## **"Requirements Are Exacting"**

The scenic supremacy of an area alone is not sufficient to gain it admission into the national park system. It must also be susceptible of whatever development is necessary to make it available for use by the millions of park visitors who may care to use it, without injuring in any way the extraordinary natural features which, under the expressed command of Congress, the National Park Service is to preserve "unimpaired for the enjoyment of future generations."

Areas whose principal qualification is adaptability for recreational uses are not, of course, of national park caliber.

Proposed parks are measured by the standards set by the major national parks of the system; hence the requirements are exacting. As long as these standards shall prevail there is no danger of too many national parks being established, or of the excellence of the present system being lowered.

## **A STATE PARK, INSTEAD**

**North Dakota Offers an Example which can  
Profitably be Followed in the East**

THROUGH promotion of the State Park Conference, the area in North Dakota proposed for the Roosevelt Memorial National Park is likely to be made a State Park instead. One of the most vividly colored examples of the Bad Lands, highly scenic, possessed of unusual recreational values, nevertheless it lacks the quality of supreme beauty required by National Park standards; and several years of persistent effort on the part of its promoters have occasioned much worry to defenders of the National Parks System, who feared that its creation as a national park would tend to break down protective barriers.

## **Public Sentiment Backing State Parks**

According to "State Recreation," Governor Sorlie will investigate the possibilities of acquiring the area for a state park, toward which local sentiment is rapidly turning. This wholesome solution was largely helped by the example of South Dakota in creating Custer State Park in the scenically finest area of the Black Hills. The conference with Governor Sorlie, says the organ of

the State Park Conference, "was arranged by Mr. F. Danielson, of Minot, President of the Greater North Dakota Association, and by Mr. James C. Milloy, Fargo, Secretary of the same association. Others who took part were Professor O. G. Libby, Secretary of the North Dakota Historical Society of Grand Forks, and the Field Secretary of the National Conference on State Parks. Congressman J. H. Sinclair, representing the district including the Bad Lands, who has presented bills in Congress for a National Park, also was present at later discussions.

"Governor Sorlie agreed to appoint a committee to act for the State, and Congressman Sinclair promised his aid in Washington, looking to transfer of the remaining Federal lands to a State preserve."

## **Good Example for the East**

North Dakota's example may well be followed by promoters of eastern national park projects, almost every one of which falls short of the incomparable scenic grandeur and other standards of the National Park System. It is the opinion of many that a State park distinction serves its State better than a national park for whose lack of the necessary special standards the country is obliged always to apologize.

Besides, the day of the State Park has dawned. State parks are ranking today by their number, size and importance.

## **A NATIONAL PARK CREED**

By JOHN C. MERRIAM  
*President Carnegie Institution of Washington*

WHILE the National Parks serve in an important sense as recreation areas, their primary uses extend far into that fundamental education which concerns real appreciation of nature. Here beauty in its truest sense receives expression and exerts its influence along with recreation and formal education. To me the parks are not merely places to rest and exercise and learn. They are regions where one looks through the veil to meet the realities of nature and of the unfathomable power behind it.

I CANNOT say what worship really is—nor am I sure that others will do better—but often in the parks, I remember Bryant's lines, "Why should we, in the world's riper years, neglect God's ancient sanctuaries, and adore only among the crowd, and under roofs that our frail hands have raised?" National Parks represent opportunities for worship through which one comes to understand more fully certain of the attributes of nature and its Creator. They are not objects to be worshipped, but they are altars over which we may worship.



UNITED STATES NATIONAL MUSEUM

UNDER DIRECTION OF

THE SMITHSONIAN INSTITUTION

WASHINGTON

May 4, 1887.

Mr. W. H. Holmes.

Honorary Curator, U. S. Nat. Mus.

Amer. Proc. Pottery

Sir:

Professor Baird desires me to say that he has made arrangements for Prof. J. W. Clarke and Mr. G. P. Merrill to examine all the jade implements in the National Museum, and others in the possession of Mr.

Thomas Wilson.

Will you kindly

and at your own convenience deliver to Prof. Clarke such objects of this kind as may be in your custody, for this purpose, taking his receipt for the same.

It is understood that no specimen will be cut without the permission of the curator over



in charge of the same!

Yours respectfully,

Er Brown Goode

Assistant Secretary, Smithsonian Institution  
in charge of U. S. National Museum







# Smithsonian Institution

Wm. D. Hoell, M.D.

Washington D.C.

SPENCER F. BAIRD,  
SECRETARY.

July 23, 1886.

Dear Mr. Holmes:

The Fisher col

\_\_\_\_\_



Smithsonian Institution

W. L. G. Hall, Mass.

SPENCER F. BAIRD,  
SECRETARY.

Washington D.C. July 23, 1886.

Dear Mr. Holmes:

The Fisher collection belongs to the Ethnological Bureau, and is to be administered exactly as Major Powell desires. It is with him, or with you as his agent, to permit Dr. Rau to figure or otherwise make use of any specimens. There will be no impropriety in Dr. Rau's making reference to the collection

over



in his report for the  
fiscal year 1886, any  
more than there would  
be to having the historical  
fact mentioned in a  
newspaper or magazine  
article. My original  
suggestion to you was  
that you should not  
only give the figures  
and descriptions of the  
Fisher and Aymeri articles,  
but also of any other  
Mexican gatherings that  
we have in the Museum.  
To this perhaps Dr. Ram  
might object; but I think  
it would be more inter-

- expecting for you to make  
an illustrated report  
on all the Mexican  
collections than upon  
a part only.

Yours truly,

Baird

W. H. Holmes, Esq.,  
U. S. Geological Survey,  
Washington.

*U.S. Commission of Fish and Fisheries.*

SPENCER F. BAIRD,  
Commissioner.

*Washington, D.C.,* \_\_\_\_\_ *188* \_\_\_\_\_







# Smithsonian Institution

SPENCER F. BAIRD,  
SECRETARY.

Wood's Hall, Mass.,  
Washington, D.C. Aug. 13, 1886.

Dear Mr-Holmes:

I send you some  
1 letters from Lamson &





Smithsonian Institution

Wood's Holl, Mass.

Washington D.C. Aug. 13, 1886.

SPENCER F. BAIRD,  
SECRETARY.

Dear Mr. Holmes:

I send you some letters from Langdon & Mr. Cornell, and one from Lamson for your consideration. I have never promised Lamson \$500 - to close out the balance of his account, although I believe some provisional arrangement was made between you and him. I have, however, told Major Powell that I wanted an allot-

ment of \$5000- to clean  
up these transactions  
and make a fresh start  
for the future, including  
the arrearages of pay to  
Symé. If you think  
that we have had from  
him already \$5000-worth  
of material, I will con-  
sent to a final settlement  
on the basis of \$800-. You  
must not forget that we  
still owe Blake \$450.

I would not be willing to  
pay Langdon & McConnell  
\$150- for the three vases  
they sent in, but might  
give \$25,- which I have.



no doubt they would  
take. Have you any  
idea where their find  
is? I wonder if Nelson  
would know. I have,  
so far, had no schedule  
from Major Powell in  
regard to his plans for  
the expenditure of the  
new appropriation.

Yours truly,  
W W Baird

W. H. Holmes, Esq.  
~~Smithsonian Institution.~~  
Geological Survey

# Smithsonian Institution

Wood's Hall, Mass.

Washington D.C.

SPENCER F. BAIRD,  
SECRETARY.

188





SPENCER F. BAIRD,  
SECRETARY.

*Smithsonian Institution*

*Grand Hall, Mass.*

*Washington, D.C.*

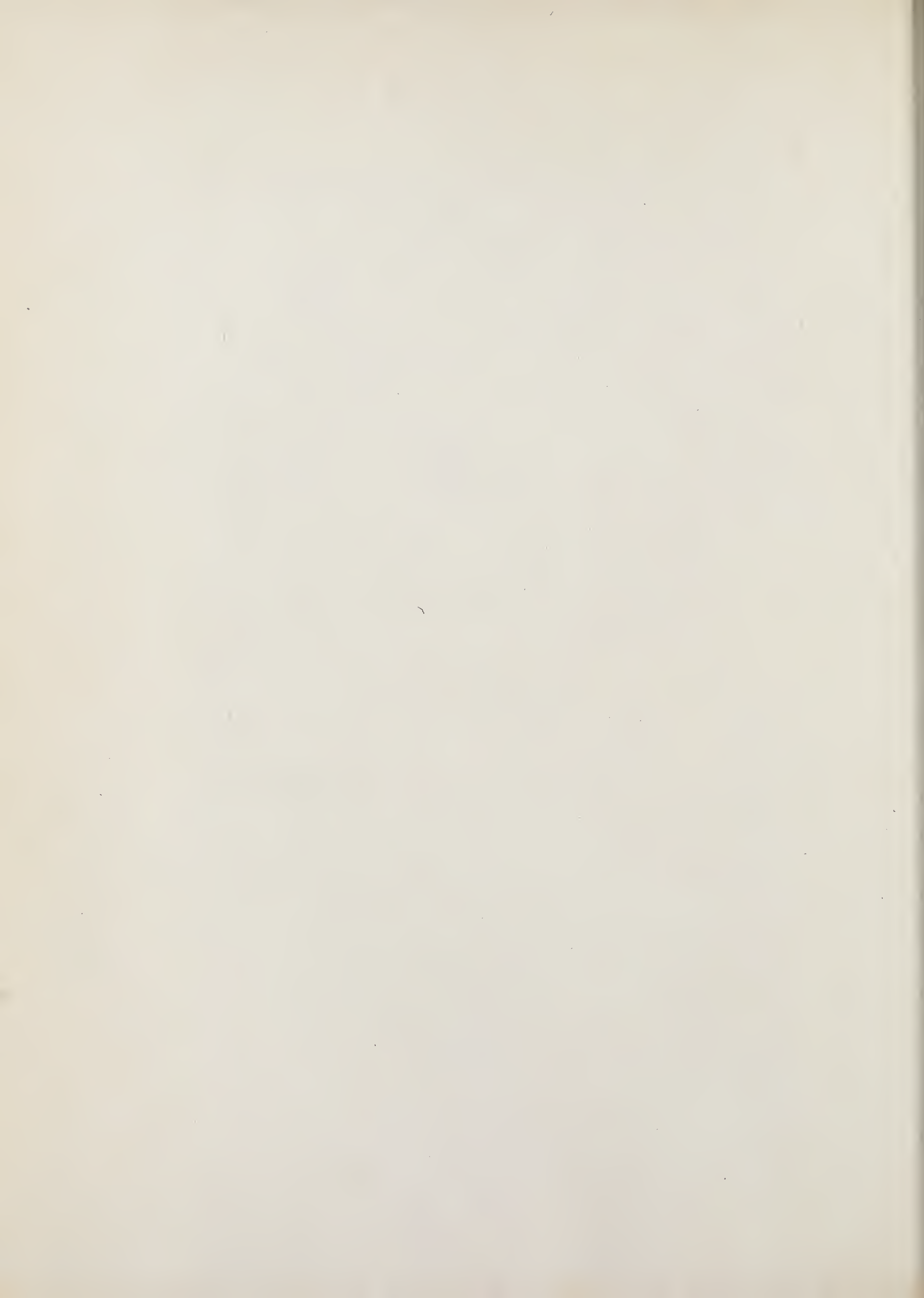
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VOLUME V

SECTION V      Appointment on Chicago University Staff. 1892  
Work on Chicago Exposition. 1892-95  
1894 Acceptance of Curatorship in the Field  
Museum, and farewell to Washington.  
Banquet and Loving Cup.

*See also Volume VII section I*



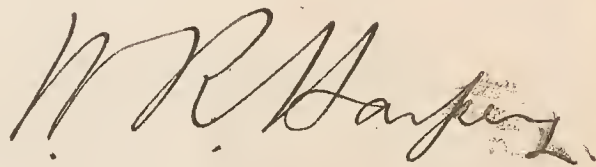


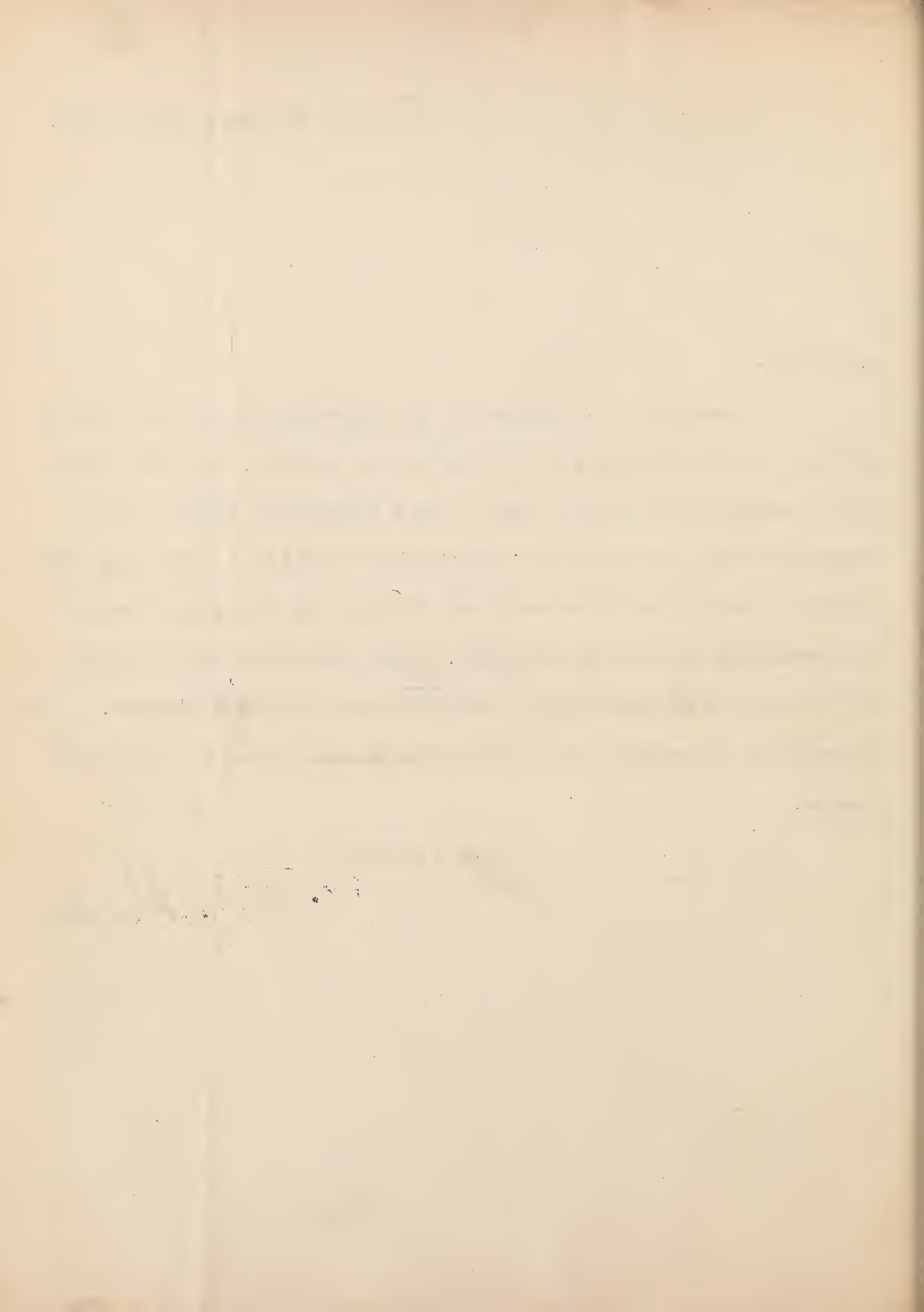
CHICAGO, September 22nd, 1894.

Dear Sir:-

I send you a programme of the exercises of the University during the Convocation Week of the Autumn Quarter, and add a cordial invitation to attend them. This invitation applies very especially to the University Convocation at which I trust you will find it possible to be present and to join the University Faculty in procession and on the platform. The exercises will be held in the University Quadrangle, October first, at <sup>3.30</sup>~~four~~ o'clock. The Convocation Procession will form at ~~half past~~ three in the Walker Museum.

Yours sincerely,

  
President





SMITHSONIAN INSTITUTION

BUREAU OF AMERICAN ETHNOLOGY

WASHINGTON, D. C.,

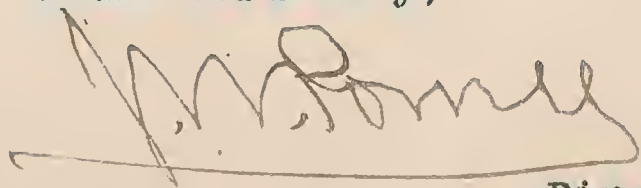
June 8, 1894.

My dear Sir:

Your communication of the 20th ultimo tendering your resignation as Archeologist of the Bureau of American Ethnology, to take effect May 30, duly reached this office, but circumstances with which you are acquainted prevented earlier response.

In accepting your resignation I desire to express high appreciation of your eminent services to the science of anthropology and to this bureau. Through your genius and enthusiasm American archeology has been revolutionized and thereby the science of anthropology has been greatly enriched. I greatly regret the severance of your connection with this bureau; but my regret is mingled with satisfaction growing out of the recognition of your abilities. I congratulate the Field Columbian Museum on the selection of so able an anthropologist as the head of that department, and predict for it a splendid career under your administration. Believe me to remain, with warm wishes for your health, happiness and success

Yours cordially,



Director.

Professor W. H. HOLMES,  
Field Columbian Museum,  
Chicago, Illinois.



T. C. CHAMBERLIN  
Head Professor of Geology  
R. D. SALISBURY  
Professor of Geographic Geology  
J. P. IDDINGS  
Associate Professor of Petrology  
R. A. F. PENROSE, JR.  
Associate Professor of Economic Geology  
C. R. VAN HISE  
President Professor of Pre-Cambrian Geology  
C. D. WALCOTT  
President Professor of Paleontologic Geology  
W. H. HOLMES  
President Professor of Archeologic Geology

THE UNIVERSITY OF CHICAGO

Founded by JOHN D. ROCKEFELLER

WILLIAM R. HARPER, President

CHICAGO April 21, 1894.

My dear Professor Holmes:-

I am in the receipt of your letter of April 17th, and thank you for it all. Mr. Skiff is out again, his attack having been sharp and short. I saw him yesterday, and he mentioned some photographs of statues you had recently sent him and spoke very cordially of what you were doing. He said it is the understanding that you are to get here about the middle of May. I judge that he did not suppose that any further orders were requisite. Of course I touch<sup>ed</sup> the matter only incidentally and made no suggestion. The fact came out of the conversation, however, that neither the President,<sup>nor</sup> any of the Vice-Presidents, nor any member of the executive committee of the board of trustees ~~are~~ in the city. Formal action is, of course, impossible under these circumstances. Mr. Ayer is still in Europe, and I understand may not be here until toward the last of May. I think, however, this is not based on any definite information. I think it would be wisest for you to come right along on the understanding had. It





might be well to write Mr. Skiff reporting your plans so that all will be a matter of record. What about Boaz?

Your coming has been announced in the papers as indicated by the enclosed slip.

Very truly yours,

A handwritten signature in cursive script, likely reading "R. H. Lowie", written in dark ink.

Professor W. H. Holmes,  
Bureau of Ethnology.





SMITHSONIAN INSTITUTION

BUREAU OF AMERICAN ETHNOLOGY

WASHINGTON,

June 9, 1894.

Professor W. H. Holmes,  
Field Columbian Museum,  
Chicago, Illinois.  
Dear Professor Holmes:

Your recent note is at hand. It is a pleasure to know that your work is well under way. I was sorry not to be able to attend your formal opening, which, judging from press accounts, gives a good promise for the future.

The Major has returned and is now domiciled on this side of the street and so far recovered as to be at work. I have pretty well concluded to publish your pottery paper by itself as volume viii of Contributions, putting the trephining paper in an annual, which can be done if the photographs are reduced a quarter or a third.

We all miss you. Your banquet reached the highwater mark of good feeling and enthusiasm; a week ago Saturday Riley's friends joined in a farewell dinner in honor of his relief from administrative work, but, while the affair was pleasant, the flow of soul was much less free than at Willard's when you were the lion.

Yours cordially,

*WJMcG*

6/10/12  
3 Dec 12

THE SECRETARY OF THE  
AMERICAN MUSEUM OF NATURAL HISTORY  
NEW YORK

Dear Sir,

I have the honor to acknowledge the receipt of your letter of the 10th inst. in relation to the loan of the skeleton of a *Proterops* to the American Museum of Natural History.

I am sorry to hear that you are unable to send the skeleton at present.

I am sure that you will be able to send it at a later date.

I am sure that you will be able to send it at a later date.

I am sure that you will be able to send it at a later date.

I am sure that you will be able to send it at a later date.

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I am sure that you will be able to send it at a later date.



MY APPOINTMENT TO THE CHICAGO POSITION

"Chicago, Ill., Oct. 27th, 1894

"Dr. W. H. Holmes,

Curator of Anthropology,

Field Columbian Museum,

"Dear Sir:-

"In conformance with the instructions of the Executive Committee, I hereby confirm your engagement as Curator of the Department of Anthropology at a salary of Three Hundred Thirty-three and 32/100 Dollars (\$333.32) per month, with the understanding and agreement that if the Museum desires to dispense with your services, such dismissal can only take place upon three months notice thereof, and on the other hand that if you desire to discontinue your services with and for the Museum, you shall give to the Museum three months notice of such intention.

"Please attach your approval to the duplicate letter herewith enclosed as an indication of your acceptance of this contract.

Yours respectfully,

F. J. V. SKIFF

Director"

*Skiff preparation for Treachery*





Washington,  
District of Columbia.

---

May the Sixteenth,  
Eighteen Hundred and Ninety four.

---

We, the Subscribers, unite in presenting to our friend and Colleague, Professor William H. Holmes, the accompanying testimonial of our appreciation of his scientific and artistic works, and of our affection, regard and good wishes, on the occasion of his departure to assume the Directorship of the Department of Anthropology in the Columbian Museum of Chicago.

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## FAREWELL BANQUET TO W. H. HOLMES

Mr. Holmes' engagement by the Field Columbian Museum, Chicago, as curator of the department of Anthropology, began May 1, 1894.\* A preliminary visit to Chicago was made May 4, extending to May 9. A week was then spent in Washington closing up his affairs in the Bureau of American Ethnology, where he was at the head of archaeological research and in the National Museum, where he was curator of American Antiquities.

On Wednesday night, May 16, a farewell banquet was given him at Willard Hall, which proved an enjoyable affair and most gratifying to him. F. H. Cushing was Toastmaster, and the speakers were G. Brown Goode, F. C. Mendenhall, E. H. Miller, Senor Zeballos, David T. Day, William E. Curtis, Cyrus Adler, Henry Gannett, Thomas Wilson, J. D. McGuire, W. J. McGee, C. D. Walcott, and Otis T. Mason.

Professor Goode responded to the "Scientific Institutions of Washington," speaking of the early days of "Holmes' association with the Institution when, in 1872, only a half dozen of those present here were associated in scientific work." He dwelt upon Holmes' work in connection with the

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\* Mr. Holmes was induced to accept the head curatorship in the new Columbian Museum by Professors T. C. Chamberlain and R. D. Salisbury of the University of Chicago, in which institution he was already non-resident professor of Anthropic Geology.

---

*Through this institution*



Institution and said he was "still to remain associated with us as an honorary curator." He congratulated Chicago, predicting success there and wishing Holmes many returns to Washington.

Mendenhall responded to "Ohio -- the home of Holmeses!" and said many pleasant things about the state and the man.

E. H. Miller spoke of Holmes' association with the artists of the city and of his work as an artist.

Senor Zeballos (Minister from Argentine) read several pages of interesting compliments, referring to Holmes' work and sympathy with science, and spoke of the places in the United States on the north and Argentine on the south where the scientist was doing work as important as that formerly done by the soldier.

Mr. Curtis spoke of Chicago and its enterprise and hopes and the field for effort it affords.

Mr. Wilson spoke of the early acquaintance with Holmes and his art work, placing him so high in this field as to overshadow his science. He could not speak upon this topic -- "Holmes in archaeology, because of what Holmes had done to undo his (Wilson's) paleolithic man!"

McGuire made a lively address, commending Holmes' work in high terms and bearing down upon Wilson.

Gannett said that a great topographer was lost to the world by Holmes' adoption of geology as his field of research.





Walcott said that geology had sustained a great loss when Powell had transferred Holmes from the Geological Survey to the Bureau of Ethnology.

Day spoke of his embarrassment as he was making his maiden effort as an orator. He spoke of Mr. Skiff, director of the Chicago Museum, and of Holmes' qualifications to fill the position accepted by him.

Adler spoke of the relations of eastern and western science, and said that we were not Americans but a colony of European peoples.

Mason addressed Holmes in a fatherly way, and described his work and his prospects in a most flattering manner.

McGee spoke in laudatory terms and wished Holmes "Godspeed and a quick return!"

Walcott then, after a flattering reference to Holmes' character and achievements, spoke of the history of Wassail and the loving cup, and then brought out from beneath his chair a beautiful two-handled silver loving cup and presented it to Holmes on behalf of his many friends. It bore the engraved inscription

Holmes was then called upon and was greeted with much enthusiasm. He said that he could not do more than thank them for the great compliment paid him. He was





greatly gratified and greatly encouraged. He had been feeling very desolate of late at the prospect of breaking the many bonds that bound him here, but he was now in a measure reconciled to the sacrifice, and would go to Chicago with cheerfulness -- indeed, that for the pleasure of this evening, he would even be willing to go to a worse place than Chicágo. He said that he was grateful for the compliments paid him, many of which were more than he deserved; that when he took up his residence in "the city by the Lake" he would do his utmost to do credit to his Washington friends and to the Smithsonian Institution.

"Auld Lang Syne" and "He's A Jolly Good Fellow" were sung and partings followed.



LOVING CUP

(Inscription)

WASHINGTON D. C.

May 16th, 1894

Presented to William Henry Holmes by his  
associates in the Smithsonian Institution  
and the United States Geological Survey  
as a token of their esteem.



7 inches  
high





COPY

LEGACION ARGENTINA

WASHINGTON

1894

Gentlemen:

I do not <sup>know</sup> if I will be able to tell you few words in order to thank you for the pleasure and the honor which afford to me the kind invitation to meet Professor Holmes.

We are here, gentlemen, congregated in the name of the Science, and especially of the American Inter-Continental Science. I am not, however, a savant, but a statesman, who did expend a great deal of the best days of his life among men of science, art and letters, because I did think always that it is a patriotic duty for the clear mind of the truth statesman to tender the due honors to the pioneers of all civilizations and to the workers of the basis of all standing Government:- and they are the patient, modest and often heroic enquirers of the facts of the Nature and of the phenomena of the moral character of the man.

The scientific career is quite an evangelic mission. You go behind the light exposing your health, or your life, fighting sometimes with the distress amidst the modern expensive society and cutting always to the happy and lovely hours of the home, the time required by the discipline of your duties. You are never sure as the glorious soldier is, of the bright and material reward from your country if you fall in the field of the work or of the investigations. Often the soldier of the Science





fight and fall without enthusiastic witnesses, in the darkness, because his language is not intelligible for the masses and the fascinating power of his discoveries seldom goes beyond the circles of few select souls.

One of those brightest circles in your country gather now around Professor Holmes, to who full justice is so done. I know his work. The Old Ceramic, the stones modeled by wild artists, the Indian remains and its decorations and the geological stratum, does speak eloquently under his investigations about the past ages, as can do the phonograph returning in the voice of the deaths. I hope his work shall enlarge its horizons in the Museum of Chicago.

The time is just come in which we want to remember that the scientific responsibility of the New World belong to the Americans. We want to unite our plan of investigation since the North Polar Sea controlled by the United States until the Austral Ocean controlled by the Argentine Republic, under the same ideal of generalization through uniform proceedings. Doing so it shall be possible to concentrate and to profit many actions which are now working alones, without guides, losing forces and results as the traveller strayed in the forest and engaged in the discovery of the truth path amongs the numberless and crossing footsteps of the wild beasts.

It seems to me that few years of general and combined action upon the three Americas shall show us other and very important aspect of the past. That aspect we could name:



"the simplification of many complexe and confuse ideas we maintain now in the fields of theory."

Remember for instance Professor Holmes address to the Anthropological Congress in the World's Fair, when he talk about the aboriginal languages. He referred to the question of the number of those languages in the three Americas. If we had previously organized the philological investigations through North, Central and South America we should have remarked perhaps that the number of the aboriginal languages is fewer; and anticipating a personal theory, based upon my own inquires, that if not all, many of those languages are not far of a common origin; and perhaps we shall find in not remote times, the unity of the original forms of the Inter-Continental wild languages with those differences, made necessary by the nature and general surrounding of each people.

But I will not go so far in the confidence of my hopes and I only would ask to you to toast congratulating our friend, Professor Holmes, to who we compromise this evening to advance his work in Chicago for honor of the Science of the United States and of Himself.

STANISLAO S. ZEBALLOS

Washington, D. C.

16th May 94





LEGACION ARGENTINA  
WASHINGTON.

Gentlemen:

I do not <sup>mean</sup> if I will be able to tell you few words  
in order to thank you for the pleasure and <sup>the</sup> honor  
which afford to me the kindest invitation to meet  
Prof. Holmes.

We are here, gentlemen, congregated in the name of  
the Science, and specially ~~with~~ of the American Latin  
Continental Science.

I am, not however, a servant, but a Statesman, who  
did ~~not~~ <sup>expect</sup> great deal of the best days of his life  
amorous.





LEGACION ARGENTINA  
WASHINGTON.

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The Scientific Career is quite an evangelic mission. You go behind the light exposing your health, or your life, fighting some times with the distress amidst the modern expensiveness of the home, the time required by the discipline of your duties.

You never are sure, as the glorious soldier is, of the bright and material reward ~~from~~ <sup>for</sup> your Country if you fall in the ~~work~~ field of the work or of the investigations. Often the soldier of the Science fight and fall without enthusiasm, in the darkness, because his language is not intelligible for the masses and the fascinating power of his discoveries seldom goes beyond the circle of few ~~select~~ ~~hands~~ select souls.

One of these brightest circles in your Country gathered now around prof. Holmes, to who full justice is so done.

I know his work. The Old Ceramic, the stones, modeled by wild artists, the Indian remains and its decorations and the geological stratum, does speak eloquently under his investigations about the past ages, as can do the phonograph returning us the voice of the deaths.



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Doing so it shall be possible to concentrate and to profit many actions which are now working alone, without guides, losing force, and result as the traveller strayed in the forest and engaged in the discovery of the truth path amongst the numberless and crossing footsteps of the wild beasts.

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If we had previously organized the philological investigations through North, Central and South America we should have remarked perhaps that the number of the aboriginal languages is fewer; and, anti-



icipating a personal theory, based upon  
my ~~own~~ inquiries, that if not all, many  
of those languages are not far of a  
common origin; and perhaps we shall find  
in not remote times, the Unity of the orga-  
nical forms of the <sup>Latin</sup> Continental Wild Lan-  
guages, with those differences, made neces-  
sary by the nature and general surrounding  
of each people.

But I will not go so far in the confidence of  
my hopes, and I only would ask to you, to ~~take~~  
~~at~~ <sup>congratulating</sup> toast to ~~the~~ ~~honour~~ of our friend, pro-  
fessor Holmes, to who we compromise this  
evening to advance his work in Chi-  
cago for ~~his~~ honour of the Science  
of the United States and of Himself.

Stanislas S. Zeballos

Washington D.C.  
16<sup>th</sup> May 94.











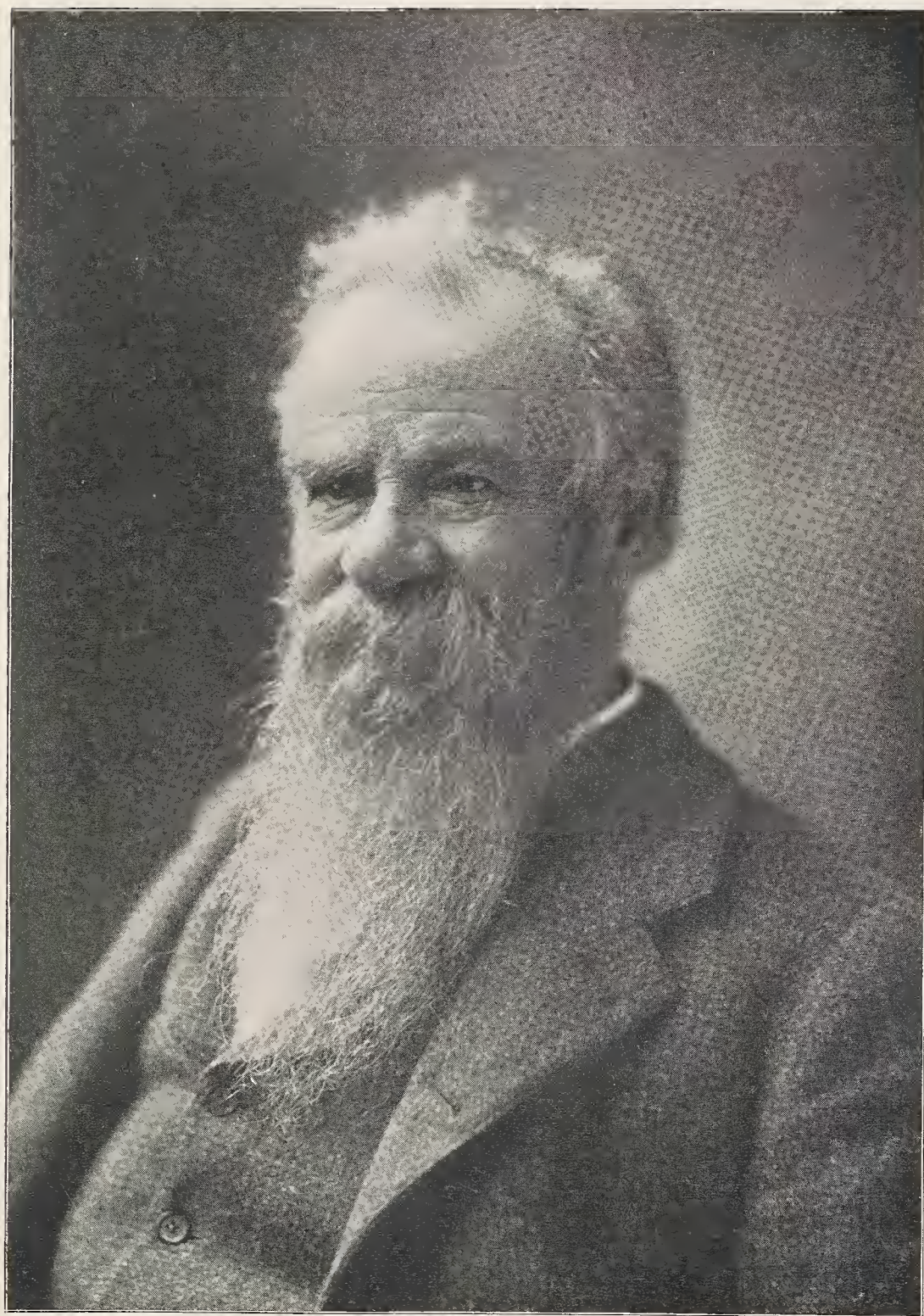
Washington D.C.

May 16<sup>th</sup> 1894.

Presented to William Henry Holmes by his  
associates in the Smithsonian Institution  
and the United States Geological Survey  
as a token of honor.







*J. M. Roman*





Out of 70 22 are dead in Jan 1911

Attendants at Banquet May 16<sup>th</sup> 1894

about  
27<sup>th</sup> in 1914 Apr 15<sup>th</sup>

S. P. Langley

W. R. Ruml

Ed Brown Goodes

W. McChr

Chas. S. Walcott,

L. Mason

Thomas Wilson

James E. Lidenip

Arnold Hager

Henry Gannett.

Whitman Cross.

Marcus Baker

H. Rizer

E. H. Mumford

Walter H. Weed.

J. S. Diller

W. R. Thompson

Frank Baker

John M. Chesney

✓ R. A. Goose

✓ F. W. Clarke

✓ Robt C. Hill.

✓ E. S. Sancy W. J. C.

✓ Thos. Hounnden

✓ ~~Frank Hamilton~~

✓ J. R. Hodge

✓ Albert S. Gatschet

John Kerstbaum  
~~John Kerstbaum~~

✓ M. Wilson.

✓ John L. Ridgway,

✓ Chas C. Darwin.

✓ David. Day

✓ Robert Nichols.

✓ Cyrus C. Babb.

✓ Arthur Keith

✓ Charles Willard Hays

✓ Wells M. Sawyer





17  
Gerrick Mallory

W. J. Hoffman

J. Owen Dorsey

Paisley Willis

W. B. Winlock

Geo. Eill

R. Edward Earle

J. W. True

Walter Strong

Wm. H. Dale

Robert H. Chapman

D. W. Filling

Lester J. Ward

Frederic A. Lucas

Frank Sutton

Geo. H. Edwidge

or Gebellos milled

G. K. Gilbert

W. A. Croft

Wm. Dimmick

Thomas Dowlough

Edwin E. Howell

H. B. Blair

Cyrus Adler

Lee J. White

J. H. Knowlton

James H. Blodgett

L. Packard

J. K. Hillers

Geo. W. Lane Wood

George F. Kunz

Gilbert Thompson











The Geological Survey at this period  
1899-1900





GEOLOGICAL SURVEY GROUP ABOUT 1890

Powell - Director  
Brown  
Newell  
Sawyer - Illustrator  
Gannett - Topographer  
Chapman  
Babb  
Day  
Sutton  
Right - next table

Walcott - Geologist  
Holmes - Geologist  
Hayes  
Gill - Illustrator  
Hill  
Croffut  
Back at right

McGee - Geologist  
Gilbert - Geologist  
Pilling - Chief Clerk  
Kubell  
Wilson - Topographer  
Parker - Topographer  
Left - next table

Baker  
Rizer - Chief Clerk  
Diller - Geologist  
Goode - Topographer  
Turner  
Back at left



*Señor Zeballos with the Argentinean people*  
*University of the Americas*  
*Kate Fields*  
*May 30, 1894*

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### A SCIENTIST'S GOOD WORK.

THE ARGENTINE MINISTER'S TRIBUTE TO PROFESSOR HOLMES.

“THE WASHINGTON is always glad to promote good feeling among the Pan-Americans, and notes with pleasure, Señor Zeballos, the active part you, as Minister from the Argentine Republic, are taking in all matters pertaining thereto. Your presence at the recent banquet given in honor of Professor William F. Holmes, on the eve of his departure for Chicago, was a special tribute to American science which is not often recognized by foreign diplomats.”

“It was not only a pleasure but a privilege to assist at that banquet, *not* as a servant, but as a statesman who has lived a great deal of the best days of his life among men of science, art and letters. It's a patriotic duty for such as I to honor pioneers of all civilizations and workers of the basis of all standing government. They are the patient, modest and heroic inquirers of the facts of Nature and of the phenomena of the moral character of man.”

“The scientific career is an evangelic mission. You go behind the light, exposing your health or your life, sacrificing to duty the hours your heart would give to home. You never are sure, as the soldier is, of the material rewards from your country if you fall in the field of scientific work or investigation. Often the soldier of science fights and falls, without enthusiastic witnesses, in the darkness, because his language is not intelligible to the masses, and the fascinating powers of his discoveries seldom go beyond the circle of a few select souls.

“I know Professor Holmes's work. The old ceramic, the stones modeled by wild artists, the Indian remains

and their decorations, the geological stratum, speak as eloquently under his investigations about the past as does the phonograph restoring the voices of the dead.

“I hope the horizon of his work will be enlarged in the Museum of Chicago. The time has come when we want to remember that the scientific responsibility of the New World belongs to the Americans. We want to unite our plans of investigation from the North Polar Sea controlled by the United States to the Austral Ocean controlled by the Argentine Republic under the same idea of generalization through uniform proceedings. Doing so, it will be possible to concentrate and to profit by many energies which are now working alone, without guides, thus losing forces and results.

“It seems to me that a few years of general and combined action on the part of the three Americas will show us other and very important aspects of the past.

“Remember, for instance, Professor Holmes's address to the Anthropological Congress at the ‘World's Fair,’ when he talked about the aboriginal languages. He referred to the question of the number of those languages in the three Americas. If we had previously organized the philological investigations through North, Central and South America, we might have remarked that the number of the aboriginal languages is less; and, anticipating a personal theory based upon my own inquiries, that if not all, many of those languages are not far from a common origin; and perhaps we might find, in not remote times, the unity of the organic forms of the intercontinental wild languages, with those differences made necessary by nature and the general surroundings of each people.”

“All honor to you, Señor Zeballos, for your genuine appreciation of the mission of science and for your regard for Professor Holmes, who cannot fail to advance a great cause as director of the Anthropological Department of the Field Columbian Museum.”





1700 Penn. Avenue.

May 16 1894

My dear Holmes:

I very greatly regret that, by reason of a bodily infirmity, the symptoms of which, when active, I dare not disregard, I shall be compelled to deny myself the pleasure of making one of the party convened in your honor tonight.

This particularly because I had coveted the pleasure of being one of those who would voice the sentiments of the members of the Society of Washington Artists, their affection for you personally.

go well - ve as successful  
and as full of happiness  
as our best wishes can  
make it.

Sincerely yours  
J. H. Dean

Mr. W. H. Holmes,  
Chicago.

I go to Chicago  
& this refers to the  
suggested party

(169)





990 to thing &  
+ this refers to the  
original packet

1700 Penn. Avenue. (15)  
May 16 1894

My dear Holmes:

I very greatly regret that, by reason of a bodily infirmity, the symptoms of which, when active, I dare not disregard, I shall be compelled to deny myself the pleasure of making one of the party convened in your honor tonight.

This particularly because I had coveted the pleasure of being one of those who would voice the sentiments of the members of the Society of Washington Artists, their affection for you personally.

their regard for your  
talents, and thus regret  
at being called upon to  
relinquish your society.

We shall miss your  
invigorating presence, your  
quiet but effective counsels,  
your brilliant works from  
the walls of our Exhibitions.

On the other hand  
we shall retain the proud  
reflection that we have  
brought you up in the way  
you should go, and now  
send you forth, as our  
representative, to conquer  
Chicago for art. with  
permission to dally oc-  
casionaly in the play

grounds of science between  
your serious efforts with  
palette and pencil.

With this understand-  
ing you may go, and may  
success and happiness at-  
tend you -

Your friend truly  
Richard D. Brooker

Mr. W. H. Holmes.





I dep.  
Chicago & the  
refers to them for  
fear

U. S. Fish Commission  
Washington, D. C.  
May 23, 1894.

Dear Mr. Holmes,

I regret very  
much that my absence  
from home prevented me  
from joining with other  
friends on the occasion  
of your farewell dinner.  
I trust your life in Chica-  
go will be as successful  
and as full of happiness  
as our best wishes can  
make it.

Sincerely yours  
J. H. Bean

Mr. W. H. Holmes,  
Chicago.





Anacostia D.C.  
May 16/94

My Dear Mr. Cushing!

I greatly regret  
the necessity of cancelling my  
hasty verbal acceptance of your  
kind invitation for Wednesday  
evening at Willard's. I especially  
regret this in consideration  
of the object of your meeting.

Mr. Holmes has been so  
long an important factor  
in Washington Art Club  
make his removal from  
our midst a distinct  
loss to our profession and to  
our art loving public.

As man and painter  
he will be missed from  
our professional ranks.  
This has been somewhat  
of a divisive alliance  
it is true, but as we  
know, there has been  
enough of him to go

Walcott presented Prof. Holmes, in behalf  
of his friends, with a large silver loving  
cup. The banquet closed with a graceful  
acknowledgment of the honor paid him by  
Prof. Holmes, in which he declared that for  
the encouragement in undertaking his new  
work he would be willing to go to a worse  
place than Chicago. All rose and sang  
"Auld Lang Syne," and a very pleasant  
incident in the life of a deservedly popular  
man was completed.



around - It is with sincere  
personal regret both as man  
and father that I bid him  
God speed; wishing for him  
the full measure of peace  
and prosperity that I believe  
he has well earned by his  
painful adherence to high  
aims. Thanking you for  
the favor of an opportunity  
to respectfully speak this  
parting word - I am

Very Sincerely Yours  
D. L. May



~~Handwritten signature~~

The Dinner

Some of the  
fugitive speculations  
as demonstrated at

And and the  
equal for the  
most other means

Whole  
of the

Quarantine

Shay

1872

THURSDAY, MAY 17,  
STAR 1894

#### HONORS FOR PROF. HOLMES.

##### A Farewell Banquet, With Speeches and Compliments.

Prof. W. H. Holmes, who recently severed his connection with the bureau of ethnology to accept the position of head of the department of anthropology in the great Field Columbian Museum at Chicago, was tendered a farewell banquet last evening that must have given him some idea of the popular hold he has upon the scientists and artists of this city, among whom he has worked so long and so successfully. Prof. Holmes, who is both a scientist and an artist, has a world-wide reputation in his special field of work, and from the speeches made last night it was evident that his colleagues believe that the big new museum in Chicago could not do better than it did in securing the services of Mr. Holmes at the head of one of the three departments of the institution.

Covers were laid for nearly a hundred in the tea room of Willard's for the banquet last evening, and the occasion was marked by every evidence of good fellowship, albeit marked by more than the usual amount of regret at losing a member of the fraternity of Washington's learned men. Mr. Frank Hamilton Cushing of the bureau of ethnology presided. At his right, about the tables which were beautifully decorated with flowers, were Prof. Holmes, Prof. Charles D. Walcott, Dr. G. Brown Goode, and on his left Senor Zeballos, minister from the Argentine Republic; Prof. W. J. McGee, W. E. Curtis and Dr. Cyrus Adler.

The first speech of the evening, after the menu had been satisfactorily disposed of, was made by Prof. G. Brown Goode of the National Museum, who responded to the toast of the scientific institutions of Washington. He referred to his pride in enjoying the acquaintance of Prof. Holmes and to the fact that he was one of an original group of seven scientific investigators. Dr. T. C. Mendenhall of the coast and geodetic survey followed him in a speech on Ohio, as the home of the guest, he himself hailing from the buckeye state. Other speeches were made by Mr. E. H. Miller, the artist, who spoke of the work done by Mr. Holmes as a water colorist; Dr. D. T. Day, Senor Zeballos, Mr. Wm. Eleroy Curtis, Prof. Thomas Wilson, Prof. Otis T. Mason, Judge J. D. McGuire and Prof. J. H. Gannett. Prof. W. J. McGee expressed the opinion that the dream of Jefferson for a great national university had been realized on a grand scale, and that the scientific institutions of Washington were in many departments leading the world. Prof. William Flint read a poem, and Prof. Charles D. Walcott presented Prof. Holmes, in behalf of his friends, with a large silver loving cup. The banquet closed with a graceful acknowledgment of the honor paid him by Prof. Holmes, in which he declared that for the encouragement in undertaking his new work he would be willing to go to a worse place than Chicago. All rose and sang "Auld Lang Syne," and a very pleasant incident in the life of a deservedly popular man was completed.









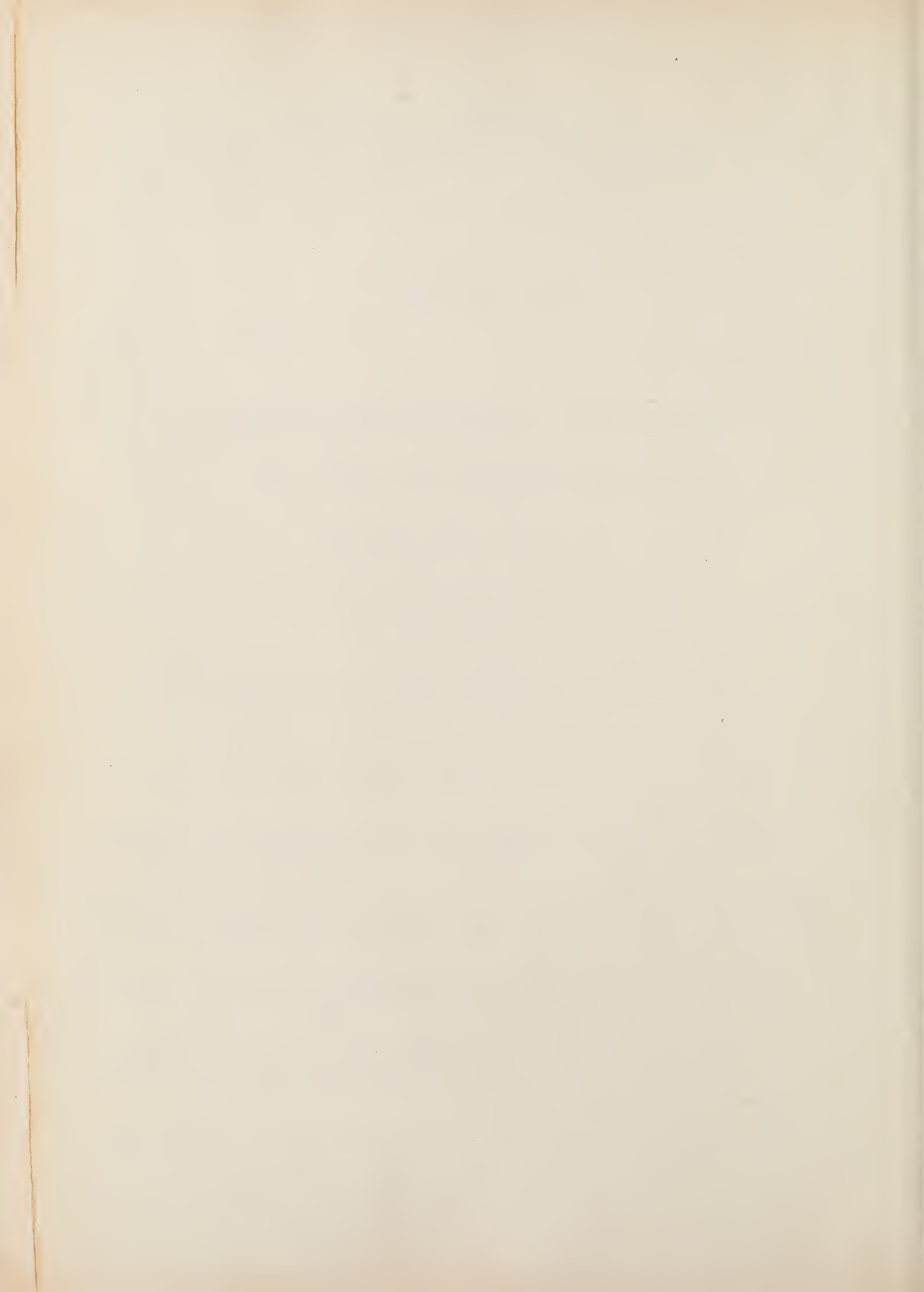
RANDOM RECORDS OF A LIFETIME  
DEVOTED TO SCIENCE AND ART, 1846-1932

BY W. H. HOLMES

LIST OF VOLUMES

- Volume I. Brief Biography, Positions Held, Loubat Prizes, Medals, etc., Societies and Clubs, Bibliography.
- II. Explorations, Episodes and Adventures, Expositions and Congresses.
- III. Part I. Yellowstone Explorations, 1872.  
Part II. Yellowstone Explorations, 1878.
- IV. Part I. Colorado Explorations, 1873, 74, 75, 76 & 87.  
Part II. The Cliff Dwellers.
- V. Europe 1879-80; Grand Canyon of the Colorado; Explorations in Mexico with Jackson and the Chains; Colorado with Powell and Langley, 1887. *Washington to Chicago*
- VI. Aboriginal Boulder Quarries, Piney Branch, D. C., Soapstone Quarries, Paint Mines, and Lay Figure Groups.
- VII. The Chicago Venture, University, Exposition, Field Museum, Yucatan, Return to Washington, 1892-97.
- VIII. Cuba with Powell; Jamaica with Langley; Mexico with Gilbert and Dutton; California with McGee; Physical Anthropology, Hrdlicka, Current Work 1900.
- IX. Chief Period, Bureau of American Ethnology, 1902-1910; Visits to Stuttgart and Chile 1908.
- X. Transfer to the Museum June 10, 1910, the Guatemalian Trip, Powell Monuments, Seventieth Birthday Celebration, 1920.
- XI. Director of the National Gallery of Art, 1920-1932.





XII. The Freer Gallery of Art.

XIII. Portraits, Smithsonian Institution.

XIV. Portraits, Bureau of American Ethnology. National  
Gallery of Art, and Miscellaneous.

XV. Masterpieces of Aboriginal American Art.

XVI. Various Articles on Art and the Art Gallery.

XVII. Personal.

XVIII. Personal.

XIX. Personal.

XX. Personal. Water Color Sketches.

